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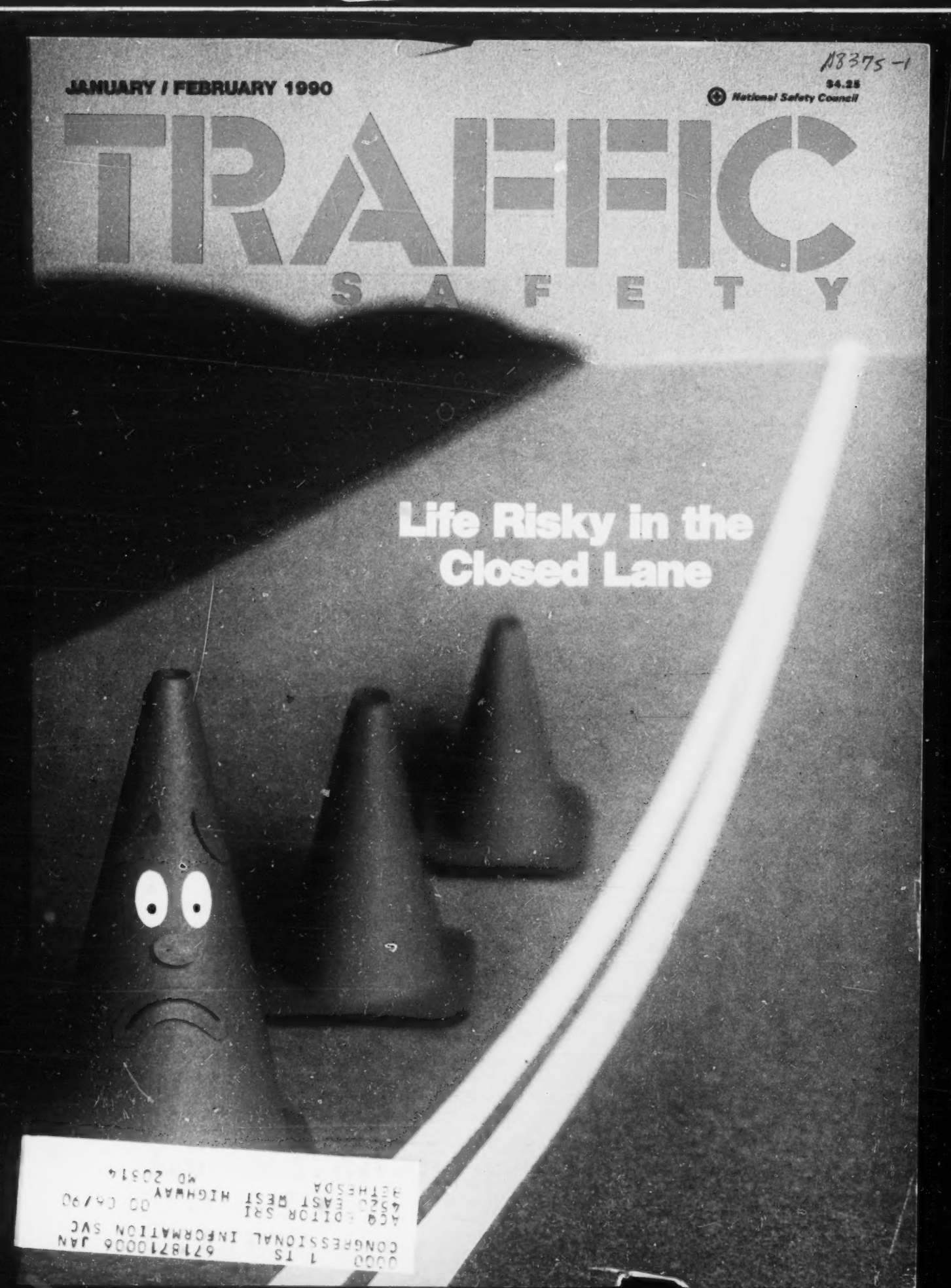

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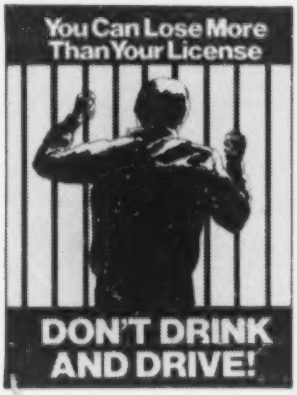

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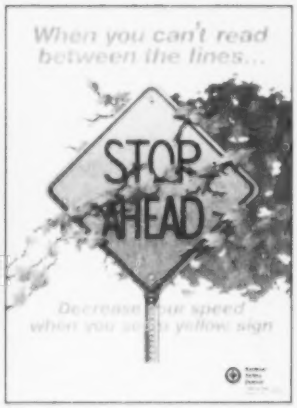

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Publisher: Kevin H. Axe (312) 527-4800, ext. 7101

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TRAFFIC SAFETY (ISSN 0041-0721) is published bimonthly by the NATIONAL SAFETY COUNCIL, 444 N. Michigan Ave., Chicago, Ill. 60611. Copyright © 1990 by National Safety Council. Printed in U.S.A. Second Class postage paid at Chicago, Ill. and at additional offices. POSTMASTER: Send address changes to National Safety Council, 444 N. Michigan Ave., Chicago, Ill. 60611.

U.S. Subscription rate: $13.80 to members of the National Safety Council; $17.25 to non-members. Quantity and foreign rates available on request.

National Safety Council
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January/February 1990

National Safety Council

TRAFFIC SAFETY

Vol. 90 No. 1

AIR BAGS AT LAST 6
MICHAEL P. MALONE
New cars to come with more safety features

WHAT'S REALLY HAPPENING OUT THERE? 10
Survey to check up on auto options

STATES OF INTOXICATION 11
JIM CASTELLI
Where drunk drivers are most common

LIFE RISKY IN THE CLOSED LANE 12
THOMAS FRISBIE
States seek new ways to protect highway workers

LOOKING WITHOUT SEEING 16
RAYMOND SCHUESSLER
What professionals should know about drivers' vision

STATES' EXPERIENCE WITH INEXPERIENCED DRIVERS 18
JERRY TANNAHILL AND MICHAEL SMITH
Update on status of provisional licensing

OSHA TIGHTENS SAFETY BELTS 22
JIM CASTELLI

SAFETY IN THE HEARTS AND MINDS OF THE PUBLIC 25
GAIL MANSFIELD
Highlights of the 77th Safety Congress

2 New Safety Posters
4 Today's Traffic
5 Shortcuts
27 Events
28 Statistics
30 New Products
31 Library
34 Two-Way Street

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Home Office, 444 N. Michigan Ave., Chicago 60611, (312) 527-4800

Printed in U.S.A.

Stock No. 311.03-010

Clean Air Controversy

ACTS Backs Off Vehicle Vapor Devices

The American Coalition for Traffic Safety (ACTS) has joined other safety groups, including the National Safety Council, in expressing reservations about placing vapor recovery devices on vehicles instead of gas pump nozzles.

Congress is presently considering a revision of the Clean Air Act that would capture explosive gasoline vapors before they could contaminate the atmosphere. The revision would prescribe the action at either the pump or on the car.

Whether capturing the vapors on board vehicles would present grave dangers is not yet clear.

Besides ACT and the Council, other groups expressing concern about the proposal include the Insurance Institute for Highway Safety, the American Automobile Association, the National Highway Traffic Safety Administration and the National Transportation Safety Board.

Missouri Shows 'Em Safety

Winter highway maintenance training in Missouri carries a strong safety segment, according to *Better Roads*.

The training focuses on safe use of chemicals and abrasives, according to Ronald Caddell, maintenance area supervisor for the state. Teaching includes proper mixing and preparation, why the materials are applied at different rates, operating and calibrating special equipment, checking to see that lights are in working order, when to change the angle of the plow, understanding operations that interfere with the normal flow of traffic and knowing where spare parts are stored.

GM Eyes New Safety Frontier

Now that airbags to protect passengers in frontal crashes are a reality, General Motors Research (GMR) is looking at the new frontier — protection in side crashes.

GMR studies have found:

- Side crashes account for some 32 percent of fatalities and account for some 8,000 deaths a year;
- Most frontal collisions occur at night and side impacts during the day;
- Frontal crashes generally involve young people and a high incidence of drug or alcohol involvement while side impacts involve older drivers with little drug or alcohol impairment.

Currently, GMR is studying the use of foams and energy-absorbing body panels. Another area of research is designing padding and arm rests based on data from studies of side-impact injuries.

Retting Wins Volvo Award

Richard A. Retting, head of Traffic Safety Division, New York City Department of Transportation, has been named winner of the *Volvo Traffic Safety Award*.

He received the prize for two projects: Queens Blvd. and Interboro Parkway. On the Queens Blvd. project, deaths and injuries dropped by 60 percent after Retting's corrective measures. On the Interboro project, he upgraded road conditions and updated traffic markings, some of which dated from the 1930s.

The prize was 500,000 Swedish krona ($72,709).

Iowa Targets Seniors

The Iowa Department of Transportation has launched a *Senior Driver Enrichment Program*.

The campaign uses driving simulators and films to "increase senior citizens' understanding of their driving capabilities." The older drivers will be asked to use the training material to react to potentially dangerous driving situations and thus assess their capabilities.

The state has some 297,000 drivers 65 years and older and they comprise some 15 percent of the total licensed drivers.

Ohio Starts School Bike Drive

Each of Ohio's 3,039 elementary schools now has a copy of the *Complete Bicycling Education Program*.

The package consists of a teacher's guide and a video. The program is designed to teach 4th, 5th and 6th graders to be predictable and visible bicyclists.

The Ohio Department of Transportation is using the program developed by the Bicycle Federation of America.

North Carolina Backs Cycle Safety

North Carolina recently passed legislation to support a motorcyle safety program, becoming the 34th state to do so.

The program will be delivered by the Department of Community Colleges through their institutions.

Funding will come from a $3 tax on each registered private motor cycle. The law also allows the state insurance commissioner to lower insurance rates for those successfully completing the program.

Ford Faces the '90s

Ford Motor Co. is meeting the 1990 model year with an emphasis on safety.

More models in the new lines will have either standard or optional air bags and anti-lock brake systems (ABS).

The Town Car and Scorpio come equipped with air bags for the driver and front seat passenger. The Mustang, Taurus, Sable, LTD Crown Victoria, Grand Marquis and the Mark VII will have factory driver's side air bags.

ABS is standard on the Probe GT and optional on all versions of the Taurus, Sable and Town Car. In addition, the Aerostar, Econoline and Club Wagon have rear-wheel ABS.

Ford is also reacting to complaints about unintended acceleration by adding an automatic transaxle shift lock to the Festiva, Tracer and Probe. To move the shift selector out of Park, the driver must depress the brake pedal, reports *Super Automotive Service*.

SHORTCUTS

Hazmat Crackdown

The House subcommittee on surface transportation of the Public Works and Transportation Committee is considering a bill to tighten regulation of the shipment of hazardous materials over the nation's roadways. The subcommittee has held hearings on several proposed bills in the field and in Washington and is now working on putting together a bill based on what it learned.

Proposals include changes to increase training requirements for drivers, make regulations more uniform from state to state and keep track of all hazardous cargo with a nationwide computer system. One subcommittee member, Rep. Douglas Applegate (D, Ohio), believes that government, rather than the chemical industry, should track the half a million daily shipments of hazardous materials. His bill would shift control of hazardous materials shipments, sometimes abbreviated on road signs as "hazmat," from the chemical industry to federal, state and local governments.

A 1980 agreement between the Transportation Department and chemical manufacturers set up an industry-run system called Chemical Transportation Emergency Center, or Chemtrec. It gives local police, fire-fighters and others a number to call for information so they will know how to handle various chemicals in an emergency.

But Applegate said the "answering service" is useful only when the materials involved are known, and this may be difficult at the site of a crash where chemicals have spilled out and the vehicle is smashed or ablaze. He said placards required on trucks carrying hazardous materials often are missing or incorrect and the Transportation Department's emergency response guidebook is not always up to date.

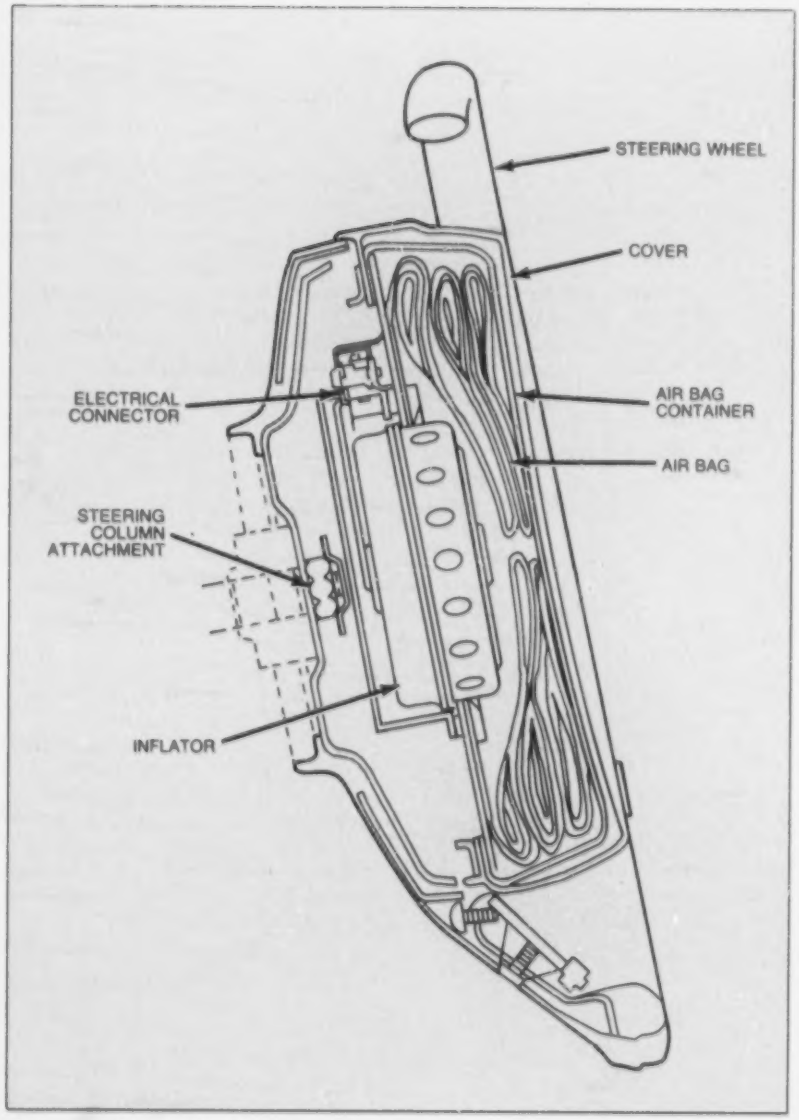
Clifford J. Harvison, president of the National Tank Truck Carriers, said the tank truck industry supports legislation that would make laws more uniform regarding hazardous materials: "Trucks cross thousands of jurisdictional boundaries daily, and carriers cannot tailor the equipment and operational characteristics of each truck and driver to meet the singular requirements of a given community."

Frederick H. Nesbitt of the International Association of Fire Fighters said a system is needed to give emergency personnel quick information about any hazardous cargo involved in an accident: "The unnecessary dangers our fire-fighters face every day due to an antiquated reporting system are inexcusable in this age of high technology."

AIR BAGS AT LAST

New cars to come with more safety features

BY MICHAEL P. MALONE



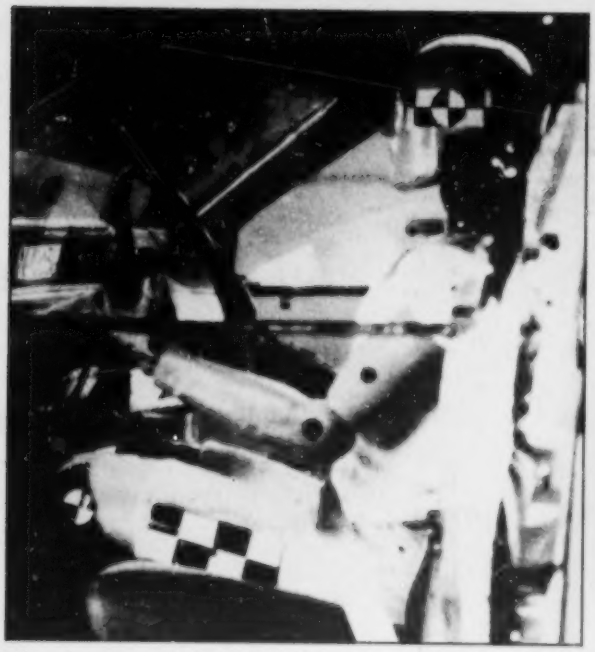
How an air bag works: Upon impact, a sensor converts a cannister of sodium azide into nitrogen gas. The gas fills the folded air bag and it pops out of the center of the steering wheel.

WITH THE introduction of the 1990 automobile models, a safety feature once thought "futuristic"will unobtrusively become a fact of life. Air bags, at least on the driver's side, will be offered as standard equipment on 2.2 million new automobiles. Air bag development has been marked by initial consumer rejection and continued confusion concerning their operation. Their 20-year history sets the stage for the next wave of safety devices to follow.

New safety features often trickle down from luxury models.

It is a potentially tragic irony, but the existence of air bags could make cars less safe. A recent national survey conducted by the American Coalition for Traffic Safety (ACTS) found that only 68 percent of the drivers surveyed understood that air bags do not replace safety belts.

The truth is that drivers who switch from using a lap/shoulder belt to using only an air bag actually increase their risk of fatality by 41 percent, according to a recent study by Leonard Evans, of the Operating Sciences Department at General Motors Research Laboratories. "The belts show substantial effectiveness for crashes in directions for which the air bag does not deploy," said Evans. Belts also prevent driver ejection, a major cause of traffic deaths. Air bags do not substantially influence the risk of being thrown from the car in a crash.



This photo sequence from the General Motors Milford Proving Ground shows a test dummy receiving air-bag protection from a 70-mph crash. The bag opens in 1/30th of a second, faster than a person can blink.

Education

It is clear that a great deal of consumer education will be needed to explain the role air bags will play in reducing the chance of serious injury and death in head-on collisions. The same ACTS survey cited showed drivers concerned that the air bags might be activated by mistake or that the driver could be trapped by the bag, or even suffocated. In fact, air bags require the simultaneous triggering of more than one sensor to be activated and, once activated, they inflate in 1/30 of a second, less time than it takes to blink your eye. They begin to deflate immediately. In control tests and field reports, drivers were able to maintain control of the vehicles. As car makers and safety groups begin to make the consumer aware of the actual facts, some of these misconceptions should subside.

Air bags are "old tech" by today's standards. The first air bags were in research and development as early as 1969 and were test marketed in the mid-seventies as a relatively expensive option car buyers stayed away from in droves. While auto manufacturers have been criticized for foot-dragging over the past 20 years, they've had time to perfect the technology. The air bag is not a new-fangled gadget, but a safety system that has been tested to the point of determining what the effect on asthmatics will be of the dust released during deployment of the bag. (The bags pose no hazard to asthmatics.)

Despite air bags, safety belts still needed.

Other Safety Features

While we await the gradual saturation of the nation's on-road fleet with air-bag-equipped cars, a variety of new safety features are in different stages of development. None are, perhaps, as dramatic as air bags in directly affecting survival rates in crashes, nor are they likely to stir the long debate between safety experts and car makers that air bags generated.

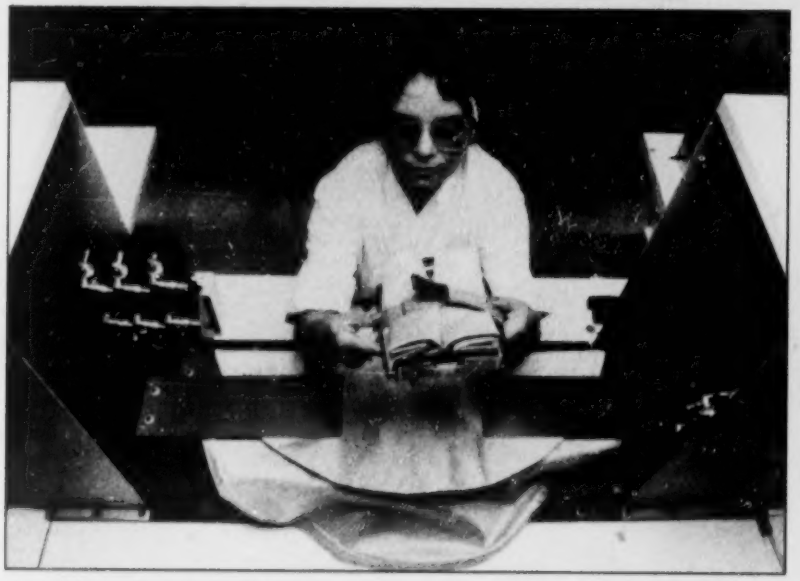
The history of the air bag shows one way new safety features become part of automobile design. After an initial rejection by consumers and a reluctance on the part of manufacturers to produce the costly option, it took a preponderance of evidence and federal regulation to make a passive restraint system (either air bags or automatic seat belts with shoulder harness) mandatory.

Other safety features are introduced without the consumer even knowing about them. Some changes in design and materials, which add only minor increases to the price of a new car, will continue to be made and help reduce the chance of serious injury or death. New interior materials of foam for interiors and reinforced side door guard beams are two examples of improvements being made to protect passengers, especially in the event of a side-impact collision. The car buyer and passenger will not likely be aware of them.

Safety Options

However, if an improvement is too costly to be absorbed into the normal price increases for new models, it is often introduced as an option. Rear window defoggers were once an option item now standard on almost every model. Anti-lock braking systems (ABSs) are a current example of this pattern. ABSs shorten stopping distances and increase control through computer monitoring of wheel rotation. When the computer senses the brakes may lock, it sends a signal to a hydraulic modulator, which can apply and release pressure up to 15 times per second. The driver will still be applying full pressure to the brake pedal; the computer will "pump" the brakes automatically.

ABSs were initially introduced as part of an option package on the highest-priced models. As the economies of scale worked to reduce costs, and as consumer demand grew along



Assembly workers at the TRW plant in Mesa, Ariz., fold air bags like parachutes.

with insurance rebates for cars with ABSs, the safety feature became a standard option on many models. In the case of General Motors, the ABS was installed on 37 models in 1989 and will be installed on 47 models in 1990. More importantly, on the majority of those vehicles it will be standard equipment.

Unlike the air bag of the 1970s, today's safety options may hold more interest for consumers. According to a 1987 study by Patrick S. McCarthy of Purdue University for the AAA Foundation for Traffic Safety, consumers today are willing to pay for safety. His study shows that if a buyer believes a car is safe, the probability of purchase increases. In fact, those cars defined as "very safe" (based on government vehicle crash tests) have double the probability of purchase.

'Sexy' Safety Features

Some safety features also have "sex appeal." Dual side-view mirrors may increase a driver's rear and side visibility and make changing lanes a safer maneuver, but many car buyers just like their looks and purchase them along with other trim and styling options. Some of the "cockpit" instrumentation, which will likely be introduced in the near future, has a high-tech appeal and will follow the pattern of starting out life as part of an option package for higher-priced models before becoming a standard option on most cars.

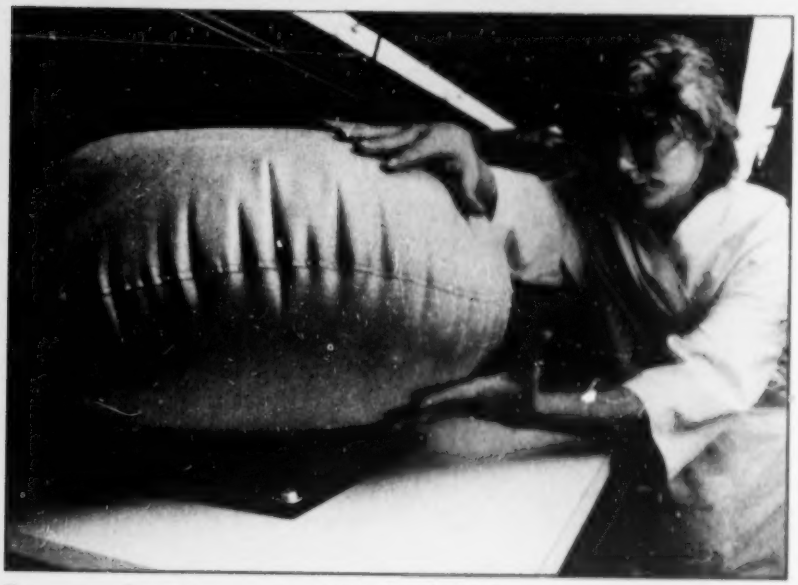
Whichever route toward consumer acceptance and widespread use future safety options take will depend on their price, consumer appeal and consumer perception of their worth as a safety feature.

Study shows higher probability of purchase for cars that rate safe.

While there is no major safety device comparable to the air bag on the horizon, a number of features are in the late stages of development. Testing will likely be introduced in production cars during the next decade. They include:

- Traction Control — An extension of the ABS concept, which adds computer control of engine power to improve stability, especially under adverse driving conditions.
- Heads-Up Display — Adapted from military aircraft technology, this feature would project important dashboard information onto the windshield, closer to the driver's field of vision. This is already available as an option on upscale Nissan models. In their design, the car's speed is projected onto the lower left windshield. Nissan claims the display cuts data-recognition time by 30 percent and reaction times by a tenth of a second. The windshield display is also intended to reduce driver fatigue. But care has to be taken to make sure too much information is not projected, making the option more confusing than helpful.

  According to Nissan spokesman Jim Bowman, the cost for the feature is relatively modest. "Heads-up display could easily be made available on upper trim levels of most cars," he said. The display is currently part of a $1,500 option package offered by Nissan. A different approach would deeply recess displays in the instrument panel, which would make it unnecessary to change the focus of the eyes when shifting between the road and instruments. This system would be shielded from direct sunlight and be visible during all conditions.
- Collision-Avoidance Warning System — Sonar/radar technology can be used to warn drivers of objects behind the car while backing up. Supplementing rear and side-view mirrors, this system would offer visual and audio warning when objects are in the path of a car moving in reverse. It would be especially useful in eliminating the "blind spots" now common while relying only on mirrors. The *Millennium*, a Chrysler Corporation test car, is equipped with the warning system. How soon might it be offered in production cars? "We are getting close," said Chrysler spokesman Ben Dunn. "It won't be put on all vehicles, but some improvements could be seen in two or three years."
- Four-Wheel Steering (4WS) — Introduced by Honda, 4WS is offered as a fairly expensive option (about



Factory test shows what an expanded air bag looks like.

$1,500) on the *Prelude Si*, and only 15 percent of the *Preludes* are sold with the 4WS. Mazda offers a different 4WS technology on its top-of-the-line Model 626. Four-wheel steering serves two purposes. It reduces the turning radius for slow-speed maneuvers, such as U-turns and parallel parking, by turning the rear wheels in the opposite direction from the front wheels. At higher speeds, the safety feature comes into play when the rear wheels turn slightly in the same direction as the front.

Theoretically, this would reduce the chance of fish-tailing and improve handling when changing lanes or engaged in an emergency maneuver on the highway. The safety benefit has not been so overwhelmingly proven that other car makers are rushing to equip their own cars with 4WS. According to J.D. Powers and Associates, who conduct customer satisfaction surveys for the auto industry, those who have cars with 4WS love it. There just aren't that many who choose the option.

- Night Vision Enhancement — Another stepchild of military technology that could find its way into the family car is infrared night vision enhancement. Potentially, such a system could make it easier for older drivers and those with night vision deficiencies to see the road. It could also reduce accidents which result from foggy conditions.

- Active Suspensions — A combination of a large on-board computer, sensors throughout the car and improved hydraulics could result in a suspension that anticipates rough pavement through sonar sensors, then automatically adjusts the suspension for the smoothest ride. It takes into account speed, throttle position, steering wheel angle and other factors. Until advances in technology can reduce the costs of the computer and the hydraulic power required, this option is likely to remain in development. Experts anticipate it may be available in five to 10 years if costs can be reduced. A simplified version of the system is currently available on the Nissan *Maxima*, which uses sonar to detect uneven road surfaces and then tightens the suspension in anticipation of a bumpy ride.

No invention yet to substitute for watching where you're going.

- Breath Analyzer Interlock — Already in use in a handful of states, this device connects a breath analyzer to a vehicle's ignition. To start a car equipped with the interlock, the driver must first blow into the analyzer. If the driver's blood alcohol level is above the setting on the device, the car will not start. A short series of "breath pulses" is used as an identification code for the driver and deters others from taking the test for the driver. These devices can be made a required condition of probation in convictions for driving while intoxicated (DWI). Although it was not introduced as a "safety" device, obviously the fewer drunken drivers there are on the roads, the safer they — and everyone else — will be.

Not all high-tech options will make cars safer. Turning cars into mobile offices with cellular phones, facsimile machines, built-in computers loaded with phone numbers, addresses, daily schedules and even road maps could distract drivers. And no one has invented a substitute for keeping your eyes on the road.

Statement of Ownership, Management and Circulation
(Required by 39 U.S.C. 3685)
Title of Publication: Traffic Safety
Publication No.: 636360
Frequency of Issue: Bi-Monthly
Location: 444 N. Michigan Ave., Chicago, IL 60611
Publisher: Kevin H. Axe, (same address)
Editor: Roy Fisher, (same address)
Managing Editor: Susan-Marie Kelly, (same address)
Owner: National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (*There are no bondholders, mortgages or other security holders.*)
Date of Filing: October 23, 1989

Average Number of Copies Each Issue During Preceding 12 Months	
Total Copies Printed	19,244
Paid Circulation (dealers,etc.)	none
Paid Circulation (mail subscription)(,F18,081	
Total Paid Circulation	18,081
Free Distribution (samples, etc.)	56
Total Distribution	18,117
Copies Not Distributed	1,127
Returns	none
Total	19,244
Actual Number of Copies of Single Issue Published Nearest to Filing Date	
Total Copies Printed	19,570
Paid Circulation (dealers,etc.)	none
Paid Circulation (mail subscription)(,F18,434	
Total Paid Circulation	18,434
Free Distribution (samples, etc.)	27
Total Distribution	18,461
Copies Not Distributed	1,109
Returns	none
Total	19,570

I certify that the statements made here are correct and complete: Kevin H. Axe, publisher.

WHAT'S REALLY HAPPENING OUT THERE?

Survey to check up on auto options

AS TRAFFIC safety professionals, you see what's happening on the streets and highways every day. You become aware of new dangers and new trends before there is time for them to be recorded in statistics.

Also, your hands-on experience gives you insights that may not be widely shared. Sometimes, there are quirky hazards that don't cause enough damage to show up in the statistics, Nevertheless, they are real dangers, and people should be warned about them.

To take advantange of your knowledge, TRAFFIC SAFETY is beginning with this issue a series of surveys. We'll ask you to tell us what you're observing about current issues. We'll tally your answers and report back to the traffic safety community what you're telling us.

Comments Invited

Make your answers as extensive as you like. You can either check off the answers to the questions below and stop or add your comments as well.

You can just tear out this page and send it in. Or, if you have to share your copy of TRAFFIC SAFETY with others, you may want to photocopy this page. Then you can write your comments on the back.

Mail your responses to:

TRAFFIC SAFETY Survey
National Safety Council
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Chicago, IL 60611

This survey is not about the recalls based on problems with the basic operating systems of vehicles. It is about the amenities and options that are added, for better or worse, to a basic transportation unit.

Obviously, some features have more than one effect. Anti-lock brakes protect a driver from running into something in the vehicle's path. At the same time, they make it harder for a following vehicle to brake in time to avoid a rear-end collision.

The question is whether you have any personal knowledge of crashes or injuries in which the following features appeared to be significant:

Vehicle Options	Yes	No
1. Air bags		
2. Seat belts		
3. Anti-lock brakes		
4. Traction control		
5. Four-wheel steering		
6. Cruise control		
7. Power windows		
8. Power locks		
9. Power seats		
10. Telephones		
11. CB radios		
12. Tape decks		
13. Tinted glass		
14. Trailer hitches		
15. Compact spare tires		
16. Emergency tire-changing systems		

States of Intoxication

Where drunk drivers are most common

BY JIM CASTELLI

You're most likely to encounter a drunk driver in Wisconsin, Nebraska, Montana, Minnesota and Texas. And you're most likely to find auto passengers without their safety belts on in the Dakotas, Kentucky and West Virginia. These are some of the findings from a report on risk behavior issued by the U.S. Centers for Disease Control.

The report was based on responses from 32 states and the District of Columbia to a 1987 survey.

Nationally, 3.3 percent of Americans drivers said they had driven after having "too much to drink" at least once in the past month. The figure was highest — 8.8 percent — in Wisconsin.

The high rate of drinking and driving in the state may be related to the fact that Wisconsin also led the nation in "binge drinking" — 29.4 percent of state residents said that had had five or more drinks on one occasion during the past month.

Nationally, 15.3 percent of respondents were binge drinkers. Other states reporting high incidents of drinking and driving were Nebraska (6.6 percent), Montana (6.4 percent), Minnesota (6.2 percent) and Texas (6.1 percent).

Kentucky reported the lowest proportion of the population who drink and drive — 1.3 percent. Other states with low incidence of drinking and driving were Maine, Rhode Island and North Carolina (1.7 percent each); in the District of Columbia, 1.8 percent of the population reported drinking and driving.

Residents of South Dakota (72.2 percent) and North Dakota (69.1 percent) were the most likely to say they "sometimes," "seldom" or "never" wear safety belts, followed by Kentucky (60.2 percent) and West Virginia (59.3 percent).

Nationally, 42.1 percent of respondents said they at least occasionally do not use their safety belts. In Hawaii, in contrast, only seven percent of the population said they sometimes, seldom or never use safety belts. Other jurisdictions reporting low rates of safety belt non-use were North Carolina (13.9 percent), the District of Columbia (14.2 percent), Texas (16.5 percent), Washington (17.0 percent), New Mexico (17.8 percent) and Florida (18.0 percent).

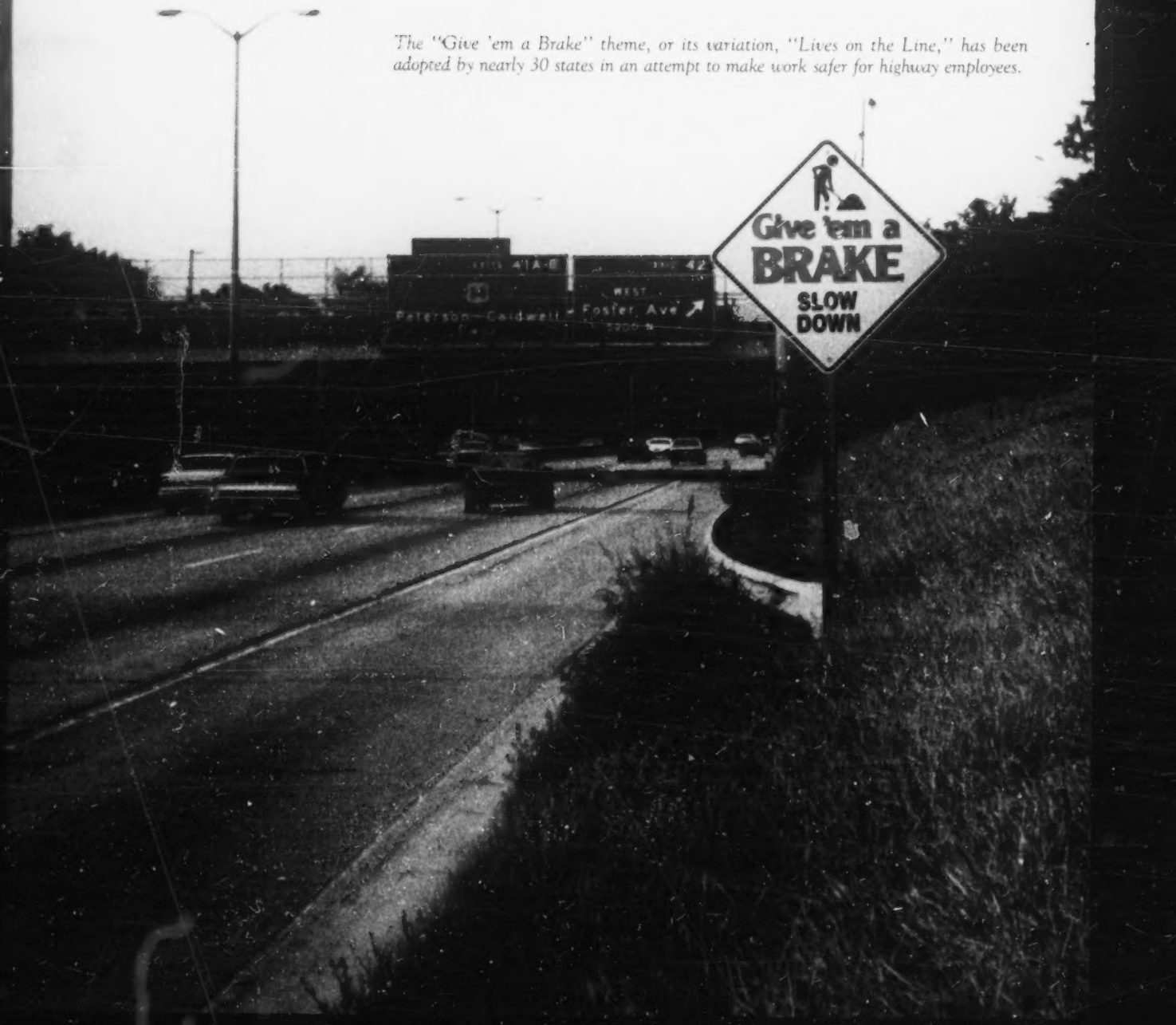
The survey also reported responses for "heavy drinking," 60 or more drinks per month; nationally, 5.6 percent of those responding were heavy drinkers. The accompanying chart shows item-by-item findings for the responding states.

State	Binge Drinking	Heavy Drinking	Drink & Drive	Seat Belt Non-Use
AL	12.5	5.6	2.6	55.8
AZ	17.6	8.0	3.5	43.9
CA	17.8	8.9	3.9	19.1
DC	9.0	4.7	1.8	14.2
FL	15.3	7.0	3.3	18.0
GA	10.6	4.4	2.2	53.0
HA	23.3	9.2	3.5	7.0
ID	15.3	5.0	2.4	42.1
IL	14.1	6.5	3.9	37.8
IN	13.2	3.8	2.4	42.3
KY	8.1	4.2	1.3	60.2
ME	13.6	7.4	1.7	55.3
MD	14.1	8.4	2.8	21.8
MA	20.6	8.8	4.2	45.4
MN	22.2	6.7	6.2	36.5
MO	17.9	6.1	4.2	37.7
MT	22.7	4.5	6.4	49.7
NB	19.4	5.1	6.6	49.6
NH	20.2	10.3	4.9	52.5
NM	6.6	3.9	2.0	17.8
NY	13.2	5.2	2.2	21.7
NC	11.5	4.4	1.7	13.9
ND	22.6	4.3	5.6	69.1
OH	17.0	6.3	3.6	27.1
RI	7.7	6.9	1.7	52.6
SC	11.9	5.6	3.5	52.4
SD	20.6	4.2	5.7	72.2
TN	10.2	4.1	2.6	33.8
TX	21.9	6.9	6.1	16.5
UT	11.0	4.3	2.1	39.2
WA	17.3	6.1	2.8	17.0
WV	13.2	3.7	2.2	59.3
WI	29.4	9.7	8.3	54.0

LIFE RISKY IN THE CLOSED LANE

States seek new ways to protect highway workers

BY THOMAS FRISBIE



The "Give 'em a Brake" theme, or its variation, "Lives on the Line," has been adopted by nearly 30 states in an attempt to make work safer for highway employees.

THE WORK zone on a Kansas City expressway looked perfectly safe late last spring, even through traffic was down to one lane. State road workers had set up flashing signs supposed to alert motorists.

The lane in which a crew was repairing concrete was closed off by a long line of cones. A flagman was on hand to keep traffic in the proper lane.

But then a motorist in a hurry showed how risky life can be in the closed lane.

Intending to pass a slower-moving vehicle, the motorist swerved through the barrier of cones. The flagman had no time to get out of the way, and the automobile catapulted his body into a large saw the crew was using to cut concrete.

"The flagman did nothing wrong," said Joseph Mickes, assistant chief engineer for operations at the Missouri Highway and Transportation Department. "It was just a flat-out motorist error" in a place where there was little margin for mistakes. And because more such accidents have been occurring in recent years, highway officials across the country are seeking ways to make the margin of safety just a little bit bigger.

Last year, for example, the National Research Council's Strategic Highway Research Program (SHRP) awarded $25,000 in prizes to 37 engineers who designed new ways to protect highway workers. The competition was held to generate ideas that might save lives, said Damian J. Kulash, SHRP's executive director. "It is a very serious problem. Hardly a year goes by in any of the 50 states in which a state (transportation department) doesn't experience at least one fatality."

Hundreds Die

Although work zones line only a tiny fraction of the nation's miles of roadway, hundreds of people die in them every year, and many more are injured. Work-zone fatalities jumped from 489 in 1982 to 756 in 1988.

According to the Federal Highway Administration, most fatal accidents in work zones involve vehicle collisions with barriers or other fixed objects, and most occur at night, even though traffic is lighter then. During the day, the most frequent type of fatal accident is between vehicles. Accidents involving alcohol account for about the same percentage of work-zone fatalities as they do for all highway fatalities, but tractor- trailer trucks are over-represented in fatal work-zone accidents.

"Jersey barriers" — big, heavy, concrete partitions that separate traffic from construction zones — have been effective in protecting workers on major projects, Kulash said. However, "we don't have anything similar for maintenance zones. It is not practical or possible to erect concrete barriers in maintenance zones. And maintenance by its nature is happening right next to traffic."

Finding new ways to protect workers and motorists traveling near work sites is becoming increasingly important because a smaller and smaller percentage of road work is new construction, where traffic isn't a safety factor, Mickes said.

Existing Roads Dangerous

"Now we are finding that much of the work we are doing is on existing highways. We are being put in a much more dangerous position because we are working right out in traffic. I think the exposure has increased dramatically," he warned.

Work-zone deaths: from 489 in 1982 to 756 in 1988.

Just last September, for example, the chief of a survey party was killed when he was crossing the pavement at a work zone, Mickes said. Some 100 employees of the Missouri Highway and Transportation Department have been killed on the job since 1945. That total doesn't include many more motorists, utility-company workers and employees of private contractors who have been killed or injured, Mickes added.

Part of the problem is that historically, motorists have tended to ignore lowered speed limits in work zones.

"I think there is a lot of fear on the part of our own employees that people are going through these work zones too fast," Mickes said. "Our workers are scared."

To help make work zones safer, Missouri has joined nearly 30 other states in a safety program that uses the slogan: "Give 'em a brake." (Minnesota has adopted the program, too, but uses a different phrase: "Lives on the Line.") The programs encourage motorists to drive carefully through areas where construction or maintenance is underway.

Education Efforts

"It is a public relations campaign that involves public-service announcements on TV and radio," said Rudolph Umbs, chief of the policy development branch of the FHWA's Office of Highway Safety. "States have brochures; they post roadside warning signs that say, 'Give 'em a brake'; they have billboards, and they have newspaper and magazine ads."

State highway departments also are adding new sections to drivers' manuals, circulating special video tapes and undertaking other efforts to publicize the need for caution in work zones. For example, the Virginia Department of Transportation, which adopted the program in 1987, ran public-service newspaper advertisements that featured department employees asking readers to watch out for them when they were on the job. More recently, Delaware, Illinois, Indiana, Maryland and Ohio have adopted the "Give 'em a brake" roadside slogan.

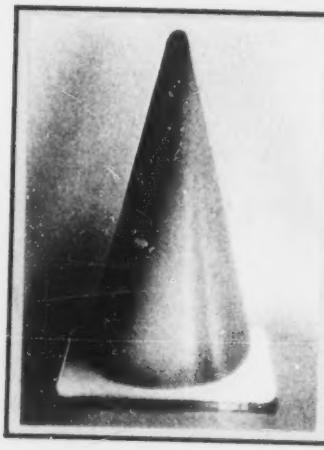
"It's a major emphasis for FHWA," Umbs said. "We certainly have been investing a lot of manpower in this."

A key component of the "Give 'em a brake" campaign, Mickes said, is a crackdown on motorists who violate lowered speed limits in work zones.

"We are working with the highway patrol to bring about increased enforcement of speed zones. They have really stepped up their enforcement. The number of citations in work zones has been phenomenal. In addition, we have retained the services of local police on paid overtime to work our work zones."

New Equipment Concepts

Around the country, new equipment and concepts are helping to make work zones safer. Plastic drums, which provide a larger surface for reflectors, are replacing cones. Plastic barricades have been designed that collapse on impact, rather than bounce into areas where they may injure workers. Steel drums, which can injure motorists, have been outlawed in some states. Truck-mounted attenuators — collapsible aluminum cartridges attached to parked trucks that



COSTS OF CONSTRUCTION

Year	Work-Zone Fatalities	Total Spending Local/State/Federal On Road Construction
		(in $ Billions)
1982	489	15.7
1983	602	16.6
1984	703	19.2
1985	678	22.1
1986	691	24.1
1987	701	25.8
1988	756	28.6 (FH[illegible] estimate)

help block work zones — can cushion the impact of vehicles that leave the highway.

In Montana, the highway department has designed a portable 34-pound, four-foot square warning sign that withstands gusty winds and can be adjusted so that it remains clearly visible even on roads bordered by steep slopes. State highway departments in many cases also are using timed electrical signs to replace human flaggers. In Connecticut, state police have approved the use of blue strobe lights, similar to those on police cars, to alert motorists to work zones. In Texas, computer programs have been devised that help predict the size and duration of traffic backups caused by road work. In Kansas, the University of Kansas Transportation Center last year devoted an entire 20-page quarterly newsletter to the subject of safety in work zones.

Can't Solve Some Problems

Even with all the new efforts under way, however, highway engineers admit there are some safety problems they don't yet know how to resolve.

For example, a massive bridge-rebuilding program in Pennsylvania has demonstrated that there often is no way to meet existing safety standards when setting up barriers at a construction site, said Keith Stonecipher, manager of regulations and control for the Traffic Engineering and Operations Division of the Bureau of Maintenance and Operations in the Pennsylvania Department of Transportation.

Motorists numb to work-zone warning signs.

Usually, Jersey barriers or other barricades are aligned at a slight 10-to-1 or 12-to-1 angle from a work zone to the shoulder of a highway. That way, if a car or truck leaves the traffic lanes, it would hit the barrier with a glancing blow instead of smashing straight into it.

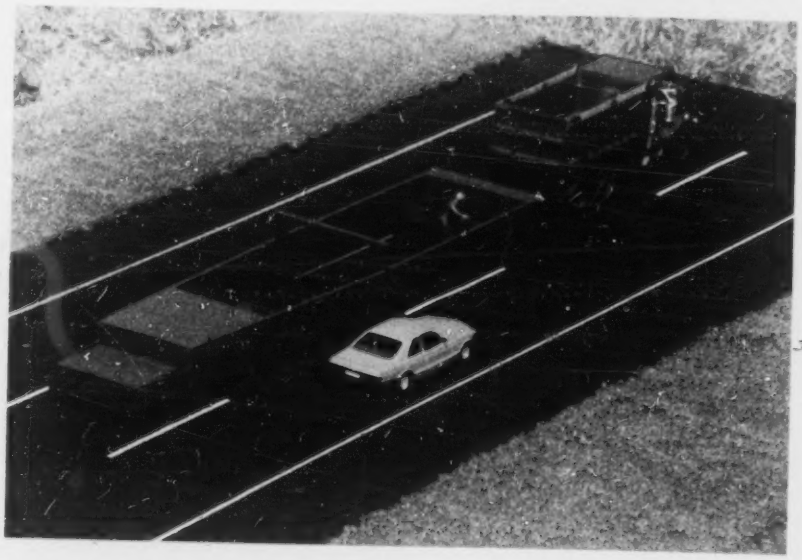
But on many jobs, there just isn't room to align the barricades properly because there is a driveway or a cross street at the edge of the work zone, Stonecipher said. As a result, the end of the barrier is exposed, creating a hazard. "There are certain types of restricted work areas where you cannot meet proper end treatments."

Research Now Underway

After Stonecipher encountered numerous work zones in which standards could not be met, he submitted a research proposal to the National Cooperative Highway Research Program (NCHRP). It concluded the problem was significant and turned it into one of its research projects.

As a result, civil engineering professor Hayes Ross is working under contract for the NCHRP to devise new barricade structures for restricted work zones. Ross is head of the structural research division at the Texas Transportation Institute, which is part of Texas A&M University.

"There are a lot of problems in work zones in trying to maintain traffic and also protect the workers and put the barriers in properly," Ross said. "The typical problem is



Invented by James Loumiet, the personnel protection trailer — shown here as a model — is scheduled for construction and testing in early 1990 by Graham-Migletz Enterprises, Inc., of Independence, Mo. It provides a mobile steel barrier to surround highway maintenance workers on the job.

this. Say you are rehabilitating a bridge in a semi-urban area where there are driveways or a road just adjacent to the work site. You have to provide access to that side street. That means that you can't carry the barrier off the bridge and flare it back as you normally would."

Last summer, Ross's researchers completed Phase I of the $450,000 NCHRP study, which attempted to summarize and classify the problems and provide some preliminary concepts for improvements.

Good Statistics Lacking

"We don't have any good accident statistics; that's one of the problems with most of our roadside safety issues," Ross said. "We don't really have a good handle on the nature of the problem. We know accident statistics in very general terms, but when you try to isolate them according to specific work zone situations, the data are not there. My guess would be the primary type (of accident) would be a nighttime accident where the driver totally disregards all the warning signs and plows through the work zone into the work area."

Research started on better barriers.

In Phase II of the study, researchers hope to develop some new ways to handle barriers in restricted work zones, Ross said.

Other new ideas for making work zones safer might grow out of the SHRP design competition. SHRP has approved a contract to build some of the winning designs and try them out over the course of a few seasons to see how effective they are. "The contest format was chosen to solicit creative ideas from highway workers and managers — those who know the most about the problems and accidents that can occur at highway construction sites," said SHRP's Kulash.

Creative Ideas

One of those "creative ideas" came from Roger Stoughton, senior materials and research engineer at the California Department of Transportation. Stoughton won one of the three top $2,000 prizes for a portable barrier to protect workers.

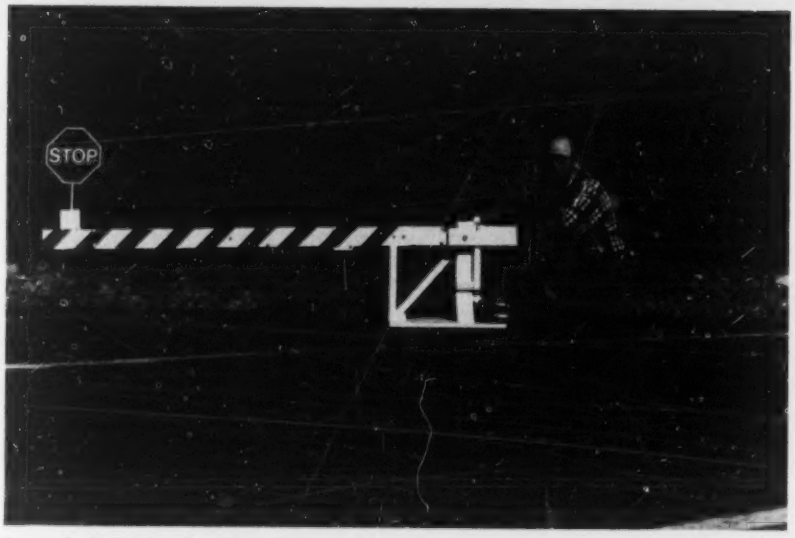
The portable barrier could be used in temporary work zones where workers now tend to use cones or other lightweight devices that can't physically block a vehicle that leaves a traffic lane, Stoughton said. "We have workers out in the traffic lanes and typically we use traffic cones to close off that lane of traffic while they are working there. The problem is that errant drivers may run right through those cones and into the workers."

On major construction sites, workers can set up concrete barriers or sand-filled drums, Stoughton said. But until now it has been too time-consuming to do that for such minor jobs as patching concrete.

To solve that problem, Stoughton designed a trailer that can be used to transport sand-filled drums quickly from work site to work site. A winch would move the heavy drums from the trailer to the road quickly enough that the system could be used even in places where workers expect to complete the job in a matter of hours.

"The trick is going to be to design this trailer so it will be quick and easy to get that array of sand barrels down," Stoughton said.

Other prize-winning concepts submitted in the contest included a sign that can be quickly and easily in-



Instead of the familiar flagman standing out in traffic as a target, this device regulates work-zone traffic flow from the shoulder of the road. Inventor Robert L. Massey shows how it says STOP when the arm is down. When the arm is lifted, the sign rotates to say SLOW.

Bobbie Bryant, a designer for Grahan-Migletz Enterprises, demonstrates an infrared device that sounds an alarm when a vehicle intrudes into the work zone. That gives workers a chance to jump for safety.

stalled and moved to alert motorists of construction ahead.

Easily movable signs are a promising notion because work crews often are tempted not to bother with signs if only a small amount of work needs to be done, said Horace Edwards, secretary of transportation in Kansas.

Two $1,000 winners in the contest designed an audible warning mechanism that alerts workers when a vehicle has entered the work area and a siren-and-rumble-strip device that warns motorists that their cars have left the main roadway.

In tight spaces some problems defy solution.

Now, noise from maintenance equipment and nearby traffic often masks the sound that could warn of an impending accident.

"I think we heard from a lot of people who have day-to-day, hands-on exposure to the problem who usually don't get a channel for some of their thoughts to be heard in terms of a research program," Kulash said.

"We had a very vigorous response to the design competition itself, and many of the people we heard from were people who work in this side of the business," Kulash added. "We had some very useful suggestions."

LOOKING WITHOUT SEEING

What professionals should know about drivers' vision

BY RAYMOND SCHUESSLER

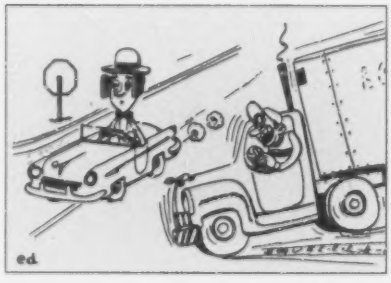
DRIVERS need good eyes to estimate automobile speeds. to see potential danger from the sides and to judge distances. In short, to drive well they must see well.

The factor of vision has scarcely been touched in the search for the causes and prevention of crashes. Research may someday prove that vision is the key factor in managing a car, especially at high speeds.

For instance, when traveling at 60 miles per hour how well can they see? The road seems to stretch ahead perfectly clear. They spot cars, trucks, curves and bridges without difficulty.

But what else do they see? At that speed, a narrow strip of road is just about all. Here is a simple test: At a crossroad is a post bearing half a dozen names of towns and villages, one above the other. How many of the names can be read at 60 miles per hour? Only a superior eye can grab the top one. The others are a mere blur. At the next crossing drop down to 40 and you can read at least two of the names. At 30 you can take in three or four.

According to Professor E. Llewellyn Thomas, a biologist and engineer at the University of Toronto who recorded eye fixation and movements with a new camera, everyone's eyes work like this:



Cartoons: American Optometric Association.

Having 20/20 vision is not good enough.

- A driver's eyes dart about rapidly in search of information, flicking to the curb, then to the edge of other cars and to the spaces between cars. if the eye cannot identify some object quickly, it jumps back again.
- Although only a small fraction of the entire visual field is seen in good focus, the eye is aware of a wide field. But detailed information is gathered only in a tiny area in the retina called the *fovea*, no larger than a head of a pin. Thus, the eye must swivel to catch details.

More than 20/20

Just being able to see a Snellen Chart and its rows of ⅜-inch letters at 20 feet is *visual acuity*. It means a 20/20 driver can see a hazard at 280 feet; a 20/40 driver at 112 feet and a 20/50 driver at 90 feet. (This means a 20/50 driver going 60 will be about 200 feet beyond the hazard when his car stops.)

But having 20/20 vision is not enough. Beyond seeing straight ahead, a driver must have good *peripheral vision* — the ability to see to either side while looking straight ahead. If you are limited in such vision, you can see only through a tunnel straight ahead, which is a danger at intersections.

Then there is *depth perception*, which allows you to tell the distance between your car and other objects. Lacking such ability, you may not be able to tell the distance from an oncoming car while passing.

During the critical accident-prone dark hours, *night vision* is vital. This means you must see well in poor light, see against glare and recover quickly when blinded by glare. This ability diminishes with age.

Twilight Threat

It is possible to see perfectly in the daytime but have trouble seeing at night. That's because eyes have two separate mechanisms: one for daylight and the other for night viewing. When twilight approaches, the eyes make a slow transition from one set of muscles to the other. This takes time and that's why twilight is the most dangerous time for motorists. During this period when light is fading, objects seem farther away than they are, and the lessening light seems to blend objects and background into a blob.

About three-fourths of people with perfectly normal vision in daylight become near-sighted in dim light, that's according to the researches of Herschel W. Leibowitz at Pennsylvania State University and D. Alfred Owens of the Massachusetts Institute of Technology.

Short Focus in Dark

Investigators had long assumed that eyes focus in total darkness at infinity. But Leibowitz and Owens found that there is a tendency of the eyes to relax when there is limited visual stimulation. Most subjects, they found, focus at a point no more than six feet away when driving at night. More distant objects will all be somewhat blurred. Yet, drivers do not reduce their speed at night. Perhaps this is why so many pedestrians, cyclists and disabled cars are struck at night.

Special prescription glasses were suggested as a solution. Most of all, Owens and Leibowitz proposed that drivers be screened for night as well as daytime visual ability.

Everyone develops vision changes with age, but most of these problems can be corrected. The worst problem is not knowing that you have a defect. Here are some of the signs that eyes may need checking:

- Is it difficult for you to determine whether the car ahead is moving towards you or just stopped?
- Do you have trouble adjusting to light or dark streets?
- When you are passing signs do you have enough time to read them?
- Do objects seem to appear suddenly from the side as you drive?

Eye specialists can correct many visual shortcomings. Those they can't cure can be compensated for by the driver. Anyone with a narrow field of vision, for instance, should keep turning his head from right to left when approaching intersections.

Drivers with poor depth perception must never pass a car when a car is coming from the opposite direction because they cannot perceive the distance between these cars.

If glare is bothersome, the driver must avoid looking into oncoming headlights by watching the right side of the road.

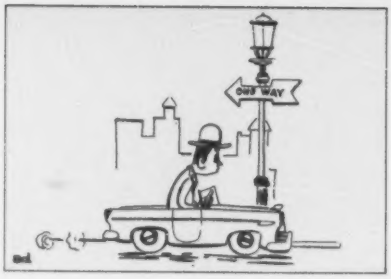
If your night vision is poor, drive slower or don't drive at all after dark.

More Rules

Here are some tips that traffic safety professionals should pass along to drivers whenever the opportunity presents itself:

Slowly shifting eye muscles make twilight the most dangerous time.

- Keep the windshield clean. Dirt can warp light rays and distort objects ahead. If your windshield has been cleaned with a chemical solution, it may cloud when the sun hits it at a certain angle. Water is best to clean windshields.
- Learn to use the sun visor judiciously to combat sunlight. Excessive sunlight not only obscures vision, it tires your eyes. Experiment with the visor and learn how it can be adjusted to obscure the sun from almost every angle.
- Sunglasses can lessen the strain of sunlight (gray and green lenses are best) and permit your eyes to adjust to quick light changes of tree-side, shadows or tunnels.
- Never drive if you are ill; a high fever will slow down visual reflexes. Medicines can affect your vision by causing dizziness and blurring. Anytime you get a prescription ask the doctor and druggist about possible effect on driving.
- Above all, use your eyes to their fullest extent. Too many drivers just stare out the window. When you drive you must use your eyes to search the entire scene so you can anticipate dangers and devise escape routes. Then you will never have to say; "I didn't see him coming!"



STATES' EXPERIENCE WITH INEXPERIENCED DRIVERS

Update on status of provisional licensing

BY JERRY TANNAHILL
AND MICHAEL SMITH

FOR YOUNG persons under age 25, traumatic injury constitutes the leading cause of death, and traffic crashes are the leading cause of traumatic injury. In 1987, young persons ages 15-24 represented 16 percent of the population and 31 percent of all traffic fatalities.

Authorities attribute the driving problems of young drivers to:

1. Driving inexperience and lack of adequate driving skills.
2. Excessive driving during high-risk hours, especially night-time.
3. Risk-taking.
4. Poor driving judgment and decision making.

After initial licensing, it takes considerable driving experience for young drivers to achieve dependable driving know-how, skill and judgment. Ways must be found to integrate novice drivers, regardless of age, into the traffic environment gradually, in a manner that enables them to gain knowledge, skill and experience over a period of time under controlled conditions.

In particular, their exposure to high-risk situations (such as night-time driving) should be reduced until they have learned how to operate a motor vehicle safely. Often, the way they learn driving skills can be enhanced through driving practice supervised by parents or guardians.

The concept of treating young novice drivers differently than the general driving population is not new.

Since the mid-1970s, Michael Smith, research psychologist, research and development, and Jerry Tannahill, highway safety specialist, traffic safety programs, National Highway Traffic Safety Administration (NHTSA), have worked closely with federal, state and private sector traffic-safety researchers and officials to reduce the involvement of young drivers in traffic crashes.

This article is a summary of the recently published report entitled, An Improved Driver Entry System for Young Novice Drivers. *The report was prepared by NHTSA and the American Association of Motor Vehicle Administrators (AAMVA) to be a national guideline for the licensing of young novice drivers.*

Driving twice as deadly for young drivers.

The *Uniform Vehicle Code*, first published in 1926, as a specimen set of motor vehicle laws, designed and advanced as a comprehensive guide for state motor vehicle and traffic laws, has provided since 1938:

"Whenever the Department issues an original license to a person under the age of 21 years such license shall be designated and clearly marked as a 'provisional license.' Upon renewal, the Department may for reasonable cause as shown by its records designate the renewal of the license as provisional; otherwise a license in usual form shall be issued subject to other provisions of this chapter."

In 1977, the National Highway Traffic Safety Administration (NHTSA) developed a provisional driver-licensing program: *Development of a Model System for Provisional (Graduated) Licensing of Novice Drivers: Final Report.*

This program was based on a review of federal and state research activities and state practices. Proposals reflected the state of the art and were scientifically supported. A review by expert state driver-licensing and control officials and researchers established the final components of the program.

Crash Rate Reduced

The Maryland Department of Motor Vehicles, under a 1977 demonstration project funded by NHTSA, implemented and evaluated a portion of this provisional-licensing program. The Maryland project final report, dated December, 1983, showed a five percent reduction in crashes and a 10 percent reduction in traffic convictions for 16- and 17-year-old provisionally licensed drivers. It recommended requiring novice drivers who have completed a high school driver-education program to take another "advanced" driver-training program

prior to full licensing. Such "advanced" driver training, though, probably would benefit only those students who had developed the necessary basic driving skills through extensive behind-the-wheel driving experience.

A California Department of Motor Vehicles' provisional-driver licensing program was implemented on January 1, 1983. It was reported recently that their provisional-licensing system reduced by 5.3 percent the rate of crashes involving 15- to 17-year-old drivers. The state legislature was advised that the provisional-licensing program be continued and that other features, such as a night-time restriction, be considered to enhance the program.

The NHTSA and the American Association of Motor Vehicle Administrators (AAMVA), recently completed the development of recommendations for an improved driver-licensing program for young drivers. This activity was carried out by the AAMVA Driver Licensing and Driver Control Committee and culminated with "An Improved Driver Entry System for Young Novice Drivers," a part of the AAMVA/NHTSA *Guidelines for Motor Vehicle Administrators*, a series of publications.

The proposed new driver entry system will ease young novice drivers into the driving environment under more controlled conditions by:

1. Increasing the amount of their supervised behind-the-wheel driving practice.

2. Increasing their exposure to progressively more difficult driving experiences under safer conditions.

3. Requiring novice drivers to earn their full driving privilege by demonstrating crash-free and conviction-free driving performance prior to being fully licensed.

New System

The new driver entry system includes the following major features:

- Learner's permit required for a specified period during the learning phase for behind-the-wheel training (90 days to one year) and successful completion (optional) of a driver-education course.
- Parent-supervised basic driving practice and advanced practice sessions during high-risk (night-time) hours.
- Youth-oriented and prompt driver improvement actions.
- Night-time restriction as a licensing phase (*e.g.*, 10:00 p.m. to 6:00 a.m.) and a method of taking remedial action.
- Establishment of age 21 as minimum for sale, purchase and use of alcoholic beverages; and lower legal blood alcohol concentration (BAC) limits (*e.g.*, zero BAC) for under-age drivers.
- Mandatory safety belt usage by all occupants of a motor vehicle being operated by a provisionally licensed driver.
- Lack of crashes or convictions for a specified time (*e.g.*, six months to one year) as evidence of safe driving habits.
- Distinct provisional license (*e.g.*, differently colored photo background than the regular driver's license).

Six states provide material to assist parents in the conduct of behind-the-wheel driving practice with young drivers. For example, the California provisional-licensing program has a publication designed for parents and/

California reports 5.3 percent fewer crashes for ages 15 through 17.

or guardians. It describes what the student is expected to learn. Its purpose is to actively involve parents and/or guardians in a teenager's learning-to-drive process. Before the applicant takes the driving test, the parent, guardian, spouse or licensed driving instructor must sign the minor's permit certifying that the points contained in the publication been have covered.

A youth-oriented driver-improvement program assures that quick action is taken before the young driver becomes a problem driver. For example, California now imposes a one-month driving restriction after the second traffic conviction or a responsible crash within 12 months. During this 30-day period, the solo driving privilege is taken away and the novice driver must be accompanied whenever he or she drives by a parent, spouse, guardian or licensed driver who's at least 25 years old.

A recent Insurance Institute for Highway Safety study of states with night-time curfews found a reduction in crashes involving 16- year-old drivers. The following eight states have night-time restrictions:

- Idaho — Daytime only;
- Illinois — 11:00 p.m. to 6:00 a.m.;
- Louisiana — 11:00 p.m. to 5:00 a.m.;
- Maryland — 12:00 a.m. to 6:00 a.m.;
- Massachusetts — 1:00 a.m. to 5:00 a.m.;
- New Jersey — Night-time;
- New York — 9:00 p.m. to 5:00 a.m.;
- Pennsylvania — 12:00 a.m. to 5:00 a.m.

Alcohol Inexperience

Young drivers' inexperience with alcohol and with driving, and their greater exposure to more hazardous driving situations, indicate that a lower BAC level is appropriate for a provisional-license program. Since all states have established age 21 as a minimum age for the sale, purchase and use of alcoholic beverages, a zero BAC limit for under-age drivers is appropriate. In North Carolina and Wisconsin, it is illegal for operators under age 18 to drive with any alco-

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Most states now restrict novice drivers one way or another.

hol in their blood. Maine and Maryland have lowered the BAC for young drivers to .02 percent; Rhode Island requires .04 percent, and California and New Mexico .05 percent. Iowa teenagers whose alcohol levels are higher than allowed by law lose their driving privileges for six months, or until they are 19 years old, whichever is longer.

Several studies have shown that young drivers and their passengers use safety belts less than more experienced drivers. All occupants of a motor vehicle being driven by a provisionally licensed driver should be required to use their safety belts. The original New York safety-belt law, which required all learner and probationary drivers to use safety belts, was the first to apply to others than infants. Currently, only five states — California, Montana, Nevada, Washington and Wisconsin — require all occupants of a motor vehicle to use safety belts.

Finally, results from the Ontario Probationary Driver System, which requires two years of driving without a suspension, show that there were nine percent fewer crashes and 14 percent fewer offenses for the probationary drivers. (Probationary drivers are allowed fewer than half the points needed for regular drivers to be suspended.) In addition, the crash rate was down seven percent and the offense rate was down 11 percent for male drivers under 20 years of age.

Maryland reduces crashes by five percent.

Currently, 33 states have placed some form of restriction on young drivers, and 26 states require completion of driver education prior to licensing before age 18. While many states are already implementing some features of the new driver-licensing entry system, none is implementing a major portion of the features proposed. In light of the Maryland and California findings, there is a need for states to review their licensing programs.

What To Do

Because several evaluations have documented the crash reduction impact of provisional licensing, state traffic-safety and driver-licensing officials should seriously consider implementing a young driver provisional-licensing system.

NEW DRIVER ENTRY SYSTEM FEATURES I

STATE	Learner Required	Prov. License	Night Restr	Manual & Test	Parent Part.	Lower BAC	Model DI Prog
Alabama							
Alaska	yes						
Arizona	yes						
Arkansas	yes						
California	yes	yes		M	yes	(.05)	yes
Colorado	yes	yes					
Connecticut	yes			M			
Delaware	yes						
District of Columbia	yes						
Florida	yes	Considering Program					
Georgia	yes						
Hawaii	yes						
Idaho			Daytime				
Illinois	yes	yes	11-6	M	yes		yes
Indiana	yes	yes					yes
Iowa	yes	Considering Program					yes
Kansas	yes						
Kentucky	yes						
Louisiana	yes		11-5				
Maine	yes					(.02)	
Maryland	yes	yes	12-6	M	yes	(.02)	
Massachusetts	yes		1-4		yes		
Michigan	yes						yes
Minnesota	yes	yes					yes
Mississippi	yes						
Missouri	yes						
Montana		Considering Program					
Nebraska							
Nevada							
New Hampshire		Considering Program					
New Jersey	yes		night	M			
New Mexico	yes					(.05)	
New York	yes		9-5				
North Carolina	yes					(.00)	
North Dakota							
Ohio	yes						
Oklahoma		New Law					
Oregon		Considering Program					
Pennsylvania	yes	yes	12-5				
Rhode Island		Considering Program				(.04)	
South Carolina		Considering Program					
South Dakota							
Tennessee							
Texas	yes						
Utah	yes						
Vermont	yes	yes			yes		yes
Virginia	yes						
Washington	yes						
West Virginia	yes	yes					
Wisconsin	yes				yes	(.00)	
Wyoming	yes						yes

Status as of January 1, 1989

Definitions

Learner's Permit Required = A learner's permit is required of all new drivers prior to issuance of a provisional or regular driver's license. Such a requirement can provide the applicant with the supervised daytime driving experience needed to develop basic behind-the-wheel skills.

Provisional Driver's License = A provisional or similar type driver's license issued to new young drivers prior to full licensing.

Night-time Restriction = A night-time restriction is applied to all new drivers (or to ages 15 and 16) to provide the applicant with a period of supervised driving practice during the hours of greatest hazard.

Manual and Test = State driver's license manual or supplemental manual (M) and the knowledge test (T) tailored for young or novice drivers.

Parent Participation = State has a program and materials that encourage the parent/guardian, may even be required, to provide supervised behind-the-wheel driving practice to their young novice driver.

Lower BAC = State has established a lower BAC (less than 0.10) for drivers under the state's legal drinking age (age 21), which means loss of license for one year or until age 21, whichever comes sooner.

Model Driver Improvement (DI) Program = State has a driver control program that provides for quicker intervention with young novice drivers than with drivers in general.

Mandatory Safety Belt Use = State law requires all occupants of a motor vehicle being driven by a provisionally or other licensed driver to be wearing safety belts.

Minor Driver License = State minor (under age 21) driver's license different from adult to facilitate enforcement of drinking-age laws.

Clean Record = Demonstrated period of safe-driving performance prior to issuance of unrestricted or regular state driver's license.

Driver Education (DE) Required = Successful completion of a driver education program required prior to issuance of regular state driver's license to young drivers under specified age.

Parent Consent = Parent/guardian consent required prior to licensing an unemancipated minor under age 18. Ages in parenthesis indicate a different age of majority for licensing purposes.

NEW DRIVER ENTRY SYSTEM FEATURES II

STATE	Mandatory Safety Blt	Minor License	Clean Record	Driver Ed Rqd	Parent Consent
Alabama					
Alaska					yes
Arizona					yes
Arkansas					yes
California	yes	yes	yes	18	yes
Colorado		yes			yes
Connecticut				18	yes
Delaware		yes		18	yes
District of Columbia					yes
Florida		yes			yes
Georgia		yes			yes
Hawaii		yes			(20)
Idaho		yes			yes
Illinois		yes		18	yes
Indiana		yes		18	yes
Iowa				18	yes
Kansas		yes			(16)
Kentucky					yes
Louisiana		yes		17	(21)
Maine		yes		17	yes
Maryland		yes	yes	18	(21)
Massachusetts		yes		18	yes
Michigan				18	(21)
Minnesota		yes		18	yes
Mississippi		yes			(17)
Missouri					
Montana	yes			16	yes
Nebraska					
Nevada	yes	yes			yes
New Hampshire				18	
New Jersey					
New Mexico		yes		16	yes
New York		yes		18	yes
North Carolina				18	yes
North Dakota					yes
Ohio		yes		18	yes
Oklahoma			yes		(16)
Oregon		yes			yes
Pennsylvania		yes		18	yes
Rhode Island		yes		18	yes
South Carolina		yes			(21)
South Dakota					yes
Tennessee					yes
Texas		yes		18	yes
Utah		yes		18	yes
Vermont		yes			yes
Virginia				19	yes
Washington	yes	yes		18	yes
West Virginia		yes		18	yes
Wisconsin	yes			18	yes
Wyoming		yes			yes

Status as of January 1, 1989

OSHA Tightens Safety Belts

BY JIM CASTELLI

Samuel Skinner, U.S. Secretary of Transportation.

Jerry Scannell, U.S. Assistant Secretary of Labor for Occupational Safety and Health Administration.

THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) is preparing regulations on seat-belt use on the job. Secretary of Labor Elizabeth Dole and OSHA Administrator Gerard F. Scannell discussed the upcoming regulations in addresses at the National Safety Council annual Congress.

"Seat belts most definitely save lives," Dole said. "That's true for the general motoring public, and it's equally true on the job. On-the-job motor vehicle crashes, in both on-road and off-road vehicles, caused approximately 37.5 percent of traumatic work-related fatalities in 1988."

"Not long after arriving at the Labor Department," Dole said, "I directed OSHA to begin drafting a standard to address this problem. And we will soon propose a regulation requiring seat-belts or similar restraints to be used in vehicles on the job. I have no doubt that this simple requirement will greatly reduce occupational injuries and fatalities."

Scannell said, "We are moving swiftly to develop a proposal for a motor vehicle safety standard that would cover all industries — construction, general industry, maritime and agriculture.

"I am convinced that effective driver training coupled with a requirement for everyone in the vehicle to use seat belts can cut on-the-job fatalities and injuries by 30 percent or more.

"Obviously, such a standard, covering vehicles used occupationally both on the highways and on private property, including construction worksites, could make a major contribution to improved job safety in America."

Safer Vans and Trucks

Transportation Secretary Samuel Skinner has announced new regulations requiring light trucks and vans to meet the same safety standards as passenger cars. The department proposed requiring stronger roofs for light trucks and minivans beginning with the 1992 models. It also issued a final rule requiring lap-shoulder belts for rear seats in light trucks and minivans for the 1992 models. Front seat belts are already required.

New Goals

As part of President Bush's "Management by Objectives" policy, each federal department is developing goals and milestones toward those goals for submission to the White House. Secretary Skinner has identified three objectives for the U.S. DOT: to improve overall transportation safety and security, to keep the National Airspace System modernization moving forward, and to develop a

National Transportation Policy statement by 1990.

DOT is working toward lowering motor vehicle crash fatality rates from its 1988 level of 2.46 and has established a goal of 2.2 deaths per 100 million vehicles miles traveled by 1992.

Secretary Skinner asked the National Safety Council to help with new safety initiatives now under development, including reinforcement of support for citizen groups, designated driver programs, and driver safety education in schools and workplaces.

He also said that drug testing is an important part of DOT's effort to lower the incidence of human error accidents. Drug testing of more than four million employees in safety- and security-related jobs in all major modes of transportation is scheduled to start in the near future. "Although our rules are undergoing challenges in the courts, I fully intend to proceed with their implementation under the law," he said.

Speedy Rules

Jerry Curry, the nominee for head of the National Highway Traffic Safety Administration (NHTSA), told senators at his confirmation hearing that he would speed up the agency's rule-making. Specifically, he promised that if confirmed he would push NHTSA to complete its decade-long consideration of an improved side-impact standard for passenger cars by next summer. Curry said he would set a goal of 18 months for the agency to approve or reject safety recommendations. The average time is now two years. But he opposed legislative time limits on safety rules.

NHTSA says it will begin enforcing stiffer regulations against "gray-market" auto imports on January 31. The rules, mandated by Congress last year, will affect about 2,100 imported cars a year that were not designed to meet U.S. safety standards. Only registered importers or someone with whom the importer has a contract will be able to import a "gray-market" car. They would then be required to bring the car up to U.S. standards. Domestic and foreign car dealers asked for the rule. They said they were blamed when the second and third buyers of such cars found the vehicles did not meet U.S. standards.

Rural Traffic Deaths

A study conducted for the National Highway Traffic Safety Administration found that traffic deaths increased by an average of 15 percent during the last two years on rural portions of interstate highways in states that raised the speed limit from 55 to 65 miles per hour.

The study, conducted by researchers from Harvard and Carnegie Mellon universities, found that the increase in traffic deaths was even higher in some states — rural interstate deaths increased 53.7 percent in Washington, 45.4 percent in Arizona, 43.3 percent in Iowa, 42.3 percent in Minnesota and 41.2 percent in Mississippi.

The rural interstate death rate drop actually fell in some states that had adopted the higher speed limit: Indiana fatalities declined 66.3 percent and Montana, 33.2 percent. The study said the reduction in fatalities may be traced in part to tougher police enforcement and seat belt laws.

Forty states have adopted the 65 mph limit since Congress enacted legislation in 1987 allowing speed limit increases on portions interstates that pass through areas with populations of 50,000 people or less. Connecticut, Maryland, Massachusetts, New Jersey, New York, Pennsylvania and Rhode Island did not raise their speed limits. Alaska and Delaware had no eligible rural interstate highways where they could raise the limit, and Hawaii had only five miles of interstates.

Enforcement

Secretary Skinner has recently written to the governors of all 50 states to enlist their participation in a nationwide campaign featuring speed as a driving safety issue. In a keynote address at the National Safety Council Congress and Exposition in Chicago, he said, "We want to see greater compliance with posted speed limits from motorists on all our roadways and this requires meaningful speeding laws with appropriate sanctions, effective enforcement and adjudication, support from elected officials and police agencies and commitment from our outstanding public and private safety organizations."

Council Recommendations

Safety must be a cornerstone of any national transportation policy, the National Safety Council told the Department of Transportation at hearings on the development of a proposed policy. Transportation Secretary Skinner has promised to announce such a policy in early 1990.

Richard L. Tippie, director of transportation safety for the National Safety Council, made these specific recommendations:

- Government spending on major capital improvements to meet the needs of increased reverse commuting from city to suburb and between suburbs.
- Expanded mass transit systems and better car/van pooling and express lanes for high-occupancy vehicles.
- Continuing and expanded highway construction, re-

construction and maintenance and increasing emphasis on traffic engineering, enforcement and education.

- The Highway Trust Fund should be continued and maintained as the primary source of federal highway financing with no restrictions that impede access to authorized funds.
- The State and Community Federal Highway Safety Program should be continued and funding increased for programs for alcohol- and other impaired drivers, passive and active restraint use, increased law enforcement on the highways and increased training for law enforcement personnel, improved traffic records systems, programs for the elderly and pedestrian safety efforts.
- Adult drivers must be motivated to take defensive driving courses.

Find Leverage

State officials told a Senate hearing that they would welcome federal incentives for toughening their highway safety laws, but oppose federal penalties for not following federal guidelines.

The officials were commenting on a proposed law introduced by Sen. John Chafee (R, R.I.). The bill would provide federal grants to help states implement their safety programs. But it would also withhold up to 10 percent of a state's federal highway funds unless it required the use of seat belts in automobiles and helmets on motorcycles.

The National Conference of State Legislatures and the National Association of Governors' Highway Safety Representatives opposed the penalties. Motorcycle rider groups also oppose them. Public health groups, physicians and the insurance industry support Chafee's proposal.

Chafee said nearly 50,000 people are killed on the highways each year. The National Highway Traffic Safety Administration estimates 20,000 lives have been saved over the last five years because of motorcycle helmets and automobile safety belts.

Check Points

The U.S. Supreme Court has agreed to take up a case testing the constitutionality of police sobriety checkpoints. The use of such checkpoints is widespread across the nation, and appeals in 22 states have held them to be constitutional. Courts in an additional six states — including Michigan — have held them to be a violation of the Fourth Amendment.

Safety Coalition

Insurance companies and consumer advocates, two groups often at odds, have formed a coalition to work for lower speed limits and other auto safety measures. The new group, Advocates for Highway and Auto Safety, will be financed almost entirely by insurance companies, which will be able to obtain a seat on the coalition's board of directors with a contribution of at least $100,000.

Joan Claybrook, president of the consumers' group Public Citizen and a co-chairwoman of the coalition's board, pointed out that two-thirds of the cost of auto insurance results from property damage and injuries, giving insurers and safety advocates reason to unite.

The coalition will work at the state level for mandatory seat belt, child safety seat and motorcycle helmet use. It will also address such issues as high incident locations, pedestrian hazard area and auto theft.

In Washington, the group will focus on the reauthorization bill for the National Highway Traffic Safety Administration. The bill, which has passed the Senate, would authorize upgrading side impact standards and extending federal motor vehicle safety standards to multipurpose vehicles and light trucks.

"About 6,000 lives could be saved each year if key motor vehicle standards (such as these) are adopted that have been pending in the Department of Transportation for the last eight years," Claybrook said, quoting NHTSA estimates. "As many as 1,500 lives could be saved with modest improvements in state highway safety laws."

Another of the group's goal, she said, will be a return to 55 mph speed limits on rural highways, which the NHTSA says could save 350 lives each year. "The speed limit is our greatest challenge in the future," she said.

The seven major insurance companies that have joined the coalition account for 40 percent of the nation's auto insurance business.

SAFETY IN THE HEARTS AND MINDS OF THE PUBLIC

Highlights of the 77th Safety Congress

BY GAIL MANSFIELD

Reflective safety signs glimmer in the exposition hall.

MORE THAN 14,000 safety and health professionals gathered at the Council's 77th annual Congress & Exposition, held Oct. 29 - Nov. 2 in Chicago. This year's Congress featured a different keynote speaker each day, the largest exposition ever and a very special Congress Night Out.

Opening session

Crowds packed the Arie Crown Theatre for Monday morning's opening session. In his speech, Council President T.C. Gilchrest encouraged safety and health professionals to make safety "competitive" in the '90s. "Safety will compete with other issues for top management attention, for the attention of our legislators and for the hearts and and minds of the general public," he said. "We need to market and promote safety and health better in order to save lives."

Gilchrest discussed the many factors changing the U.S. work force: an

Elizabeth Dole, U.S. Secretary of Labor, with T.C. Gilchrest, president of the National Safety Council.

increase in illiterate employees, poor health and fitness among workers, increased substance abuse and emotional health problems, growing numbers of women, minorities and temporary workers. "We need to gear our safety education programs to meet these changes," he said.

He discussed the importance of keeping safety and health issues in the eye of legislators and the general public. Gilchrest urged each member of the audience to work toward making safety competitive.

"Apathy, inertia and misunderstanding are our worst enemies, whether we're battling drugs, illiteracy or public perceptions. The mission of safety and health requires energy and commitment. It's the only way to bring the deaths, injury and illness numbers down."

David P. Curley, chairman of the Council's Board of Directors, addressed the subject of risk. "As safety and health professionals, we are in the business of risk," he said.

Curley suggested that the goal of safety and health workers is to "strike a balance between acceptable risks, costs and benefits . . . our role is to bring sense and reason to the public's perception of risks. The National Safety Council is moving forward trying to build a framework of risk understanding for leaders in industry, government, labor, transportation, education and community service." He encouraged those present to "join us in exploring the risks that cause accidents and steal productive lives from this country."

Elizabeth Dole

U.S. Secretary of Labor Elizabeth Dole was the opening session's featured speaker. Dole provided an update on the Department of Labor's activities, reporting that she has proposed an increase of $15 million dollars for the OSHA enforcement budget, and that OSHA is developing a set of voluntary guidelines to address the problem of repetitive-movement injuries. She also outlined the department's new policies and standards addressing the trenching/excavation industry, the mining industry, work-related motor vehicle accidents and substance abuse in the workplace.

"Making safety a top priority of both the public and private sectors, moving aggressively to prevent safety hazards before they occur; maximizing the effectiveness of our rule-making and enforcement authority; fighting the battle against drugs: these are the policies of the Department of Labor as we enter the last decade of the 20th century. The policies can't succeed without your help . . . working together, we will meet that challenge, and we will ensure that Americans at work are Americans who are safe."

Opening session entertainment consisted of a rousing orchestra and choral group opening and close, plus a state-of-the-art multimedia presentation.

OSHA Goals

Gerard F. Scannell, newly named head of OSHA, served as Tuesday's keynote speaker. Scannell discussed issues high on OSHA's agenda: strict and consistent enforcement, on-the-job motor vehicle safety, record-keeping, ergonomics, AIDS and other bloodborne diseases, indoor air quality, hazard communication, workplace substance abuse and administrative reform.

Wednesday's keynoter was U.S. Secretary of Transportation Samuel Skinner. Skinner discussed the Department of Transportation's goals: greater compliance with posted speed limits, reconstructing America's crumbling highway system, improved vehicle safety standards, drug testing within the department, and improved aviation safety and security.

Skinner also announced two new actions by the National Highway Safety Administration. The actions apply to light trucks, multipurpose vehicles and convertible passenger cars. The first action, now a rule, requires rear-seat lap/shoulder belts in any of these vehicles manufactured after Sept. 1, 1991. The second action, if passed, would require roof crush protection on 1992 multipurpose passenger vehicles and trucks with a gross vehicle weight rating of 10,000 pounds or less.

Addressing Major Issues

Twenty-four blockbuster sessions and more than 125 specialty sessions covered a variety of issues relating to workplace, home, traffic, public and school safety.

Traffic and motor fleet topics were addressed in these sessions:

- "Into the '90s with Occupant Protection: An Update";
- "Overlooking the Number One Cause of Dollar and Productivity Losses: Focusing on a Total Safety and Health Program" (costs of motor vehicle accidents;
- "Air Brakes — What Are the Latest Trends Since Standard 121?";
- "Through the Years . . . Still the First Name in Driver Improvement"

(25th anniversary of the Defensive Driving Course);

- "Work-Related Motor Vehicle Injury Costs — The Bottom Line";
- "Accident Investigation — The Importance of Collecting Information and Preserving Evidence" (school bus accidents);
- "How Should Safety Influence Specifications?";
- "Current Changes in DOT Regulations";
- "How Does the Media Approach an Accident Scene and How Do You Handle It?";
- "Programs to Counter Productivity and Economic Losses";
- "How to Manage the High-Risk Employee";
- "New Commercial Driver's License and Worker's Compensation Critique";
- "Minimum Operating Time to Qualify New Operators;"
- "Directions for Traffic and Transportation: Tomorrow and the Future";
- "Safety Survey/Inspection and Audits";
- "Driver Shortage — Meeting the Challenge";
- "Safe Transportation of Disabled Passengers"; and
- "Hazardous Cargo Briefing and Discussion."

Record-Setting Exposition

At the 1989 Exposition, more than 500 firms exhibited their products, programs and services at 1,081 booths — more exhibits than at any previous Congress. Materials covered at the Exposition included: administrative aids, incentive and award plans, computer services, consulting services, and educational and training aids. Other products were: fall protection, fire protection and security, hazardous materials controls, health risk controls, motor transportation education and safety, personal protection, production safety and safety signage.

Night Out a Success

Tuesday night was Congress Night Out, the official social evening of Congress week. Attendees enjoyed two shows featuring country singer Crystal Gayle and comedian Robert Klein. Proceeds benefited the Foundation for Safety and Health, a fund-raising arm of the Council which provides grants for safety and health programs developed both within and outside of the Council.

EVENTS

Drug Awareness

JANUARY

Hazardous Materials Transportation Training — Jan. 9-10, Cleveland; Jan. 23-24, Caspar, Wyo. — National Safety Council, 444 N. Michigan Ave., Chicago 60611 (312) 527-4800, extension 8407.

Forklift Truck Operators Instructor Course — Jan. 17, Jamesburg, N.J. — Marlene J. Schmidt, Occupational Safety Conference, New Jersey Safety Council, 6 Commerce Dr., Cranford, NJ 07016. (201) 272-7712.

Developing an Effective Drug Awareness Program — Jan. 17, Chapel Hill, N.C. — Edith Eubanks, ELB & Associates, Inc. 605 Eastowne Dr., Chapel Hill, NC 27514. (800) 334-5478.

Forklift for Operators — Jan. 18, Los Angeles — The Training Institute, Greater Los Angeles Chapter, National Safety Council, 3450 Wilshire Blvd., Los Angeles 90010. (213) 385-6461.

Defensive Driving for Professional Truck Drivers — Jan. 31-Feb. 1, St. Paul, Minn. — Minnesota Safety Council Resource Center, 474 Concordia Ave., St. Paul, MN 55103. (612) 291-9150 or (800) 444-9150.

Instructor Development Course for Professional Truck Drivers — Jan. 31-Feb. 1, St. Paul, Minn. — Minnesota Safety Council Resource Center, 474 Concordia Ave., St. Paul, MN 55103. (612) 291-9150 or (800) 444-9150.

FEBRUARY

DDC-8 — Feb. 5-7, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago 60611. (312) 527-4800, extension 8527.

Hazardous Materials Transportation Training — Feb. 7-8, St. Paul, Minn. — National Safety Council, 444 N. Michigan Ave., Chicago 60611 (312) 527-4800, extension 8407.

DDC-4 — Feb. 8-9, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago 60611. (312) 527-4800, extension 8527.

DDC-PTD — Feb. 12-14, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago 60611. (312) 527-4800, extension 8527.

Forklift for Operators — Feb. 15, Los Angeles — The Training Institute, Greater Los Angeles Chapter, National Safety Council, 3450 Wilshire Blvd., Los Angeles 90010. (213) 385-6461.

DDC-CTMD — Feb. 15-16, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago 60611. (312) 527-4800, extension 8527.

August Traffic Deaths Down 5%

By MARY E. JOHNSTON
AND URSULA ZUEHLKE

Traffic Deaths by State

Deaths are reported by state traffic authorities. All figures are preliminary. To insure proper comparisons, 1987 and 1988 figures cover the same reporting period as those for 1989.

Population Rate: U.S. population rate is the estimated annual number of deaths per 100,000 population, assuming that deaths for the rest of the year will follow the normal seasonal pattern. State population rate is the estimated annual number of deaths per 100,000 population, assuming that the monthly average of deaths will remain at the present average for the rest of the year. U.S. population rate is based on July 1, 1989, population estimate; state population rates are based on July 1, 1988, population estimates, U.S. Bureau of Census, Washington, D.C.

States shown in CAPS have improved in 1989 compared with 1988.

Mileage Rate: The number of deaths per 100 million vehicle miles of travel.

STATE NAME	MONTHS REPORTED	DEATHS IDENTICAL PERIODS 1989	1988	1987	PERCENT CHANGES 1988 TO 1989	1987 TO 1989	1989 POP. RATE	1989 MILE. RATE
Total U.S.	8	30,520	31,630	31,230	– 4%	– 2%	19.0	2.4
ALABAMA	8	654	659	722	– 1%	– 9%	24.0	2.6
ALASKA	8	50	56	47	–11%	+ 6%	14.3	1.6
ARIZONA	8	532	594	571	–10%	– 7%	23.6	2.5
Arkansas	8	409	369	410	+11%	– 0%	25.7	3.1
California	8	3,385	3,212	3,436	+ 5%	– 1%	18.4	2.1
COLORADO	8	335	352	364	– 5%	– 8%	15.2	1.8
CONNECTICUT	8	252	305	270	–17%	– 7%	11.8	1.1
DELAWARE	8	72	115	95	–37%	–24%	16.8	1.7
D. of C.	8	55	41	34	+34%	+62%	13.1	2.4
FLORIDA	8	2,010	2,018	1,964	– 0%	+ 8%	25.1	2.8
Georgia	8	1,037	1,022	915	+ 1%	+14%	25.0	2.4
HAWAII	8	92	99	89	– 7%	+ 3%	12.7	1.8
IDAHO	8	152	172	176	–12%	–14%	22.8	2.5
ILLINOIS	8	1,064	1,191	1,064	–11%	0%	13.8	2.0
INDIANA	8	628	675	718	– 7%	–13%	17.0	2.2
IOWA	8	336	353	312	– 5%	+ 8%	17.8	2.3
KANSAS	8	256	305	298	–15%	–14%	15.6	1.6
KENTUCKY	8	528	538	523	– 2%	+ 1%	21.3	3.1
LOUISIANA	8	499	552	544	–10%	– 8%	16.8	2.6
MAINE	8	143	159	149	–10%	– 4%	18.1	1.7
MARYLAND	8	470	510	505	– 8%	– 7%	15.5	1.9
MASSACHUSETTS	8	426	448	410	– 5%	+ 4%	10.9	1.1
MICHIGAN	8	1,040	1,062	994	– 2%	+ 5%	17.0	2.0
MINNESOTA	8	562	600	541	–10%	+ 6%	12.5	1.3
MISSISSIPPI	8	443	456	495	– 2%	–10%	25.4	2.9
MISSOURI	8	684	701	663	– 2%	+ 3%	20.1	2.2
MONTANA	8	119	133	152	–11%	–22%	22.1	2.3
Nebraska	8	196	169	188	+16%	+ 4%	18.4	2.0
Nevada	8	189	187	174	+ 1%	+ 9%	28.2	2.9
New Hampshire	8	130	113	116	+15%	+12%	18.4	2.0
NEW JERSEY	8	568	660	634	–14%	–10%	11.1	1.4
New Mexico	8	349	318	365	+10%	– 4%	34.9	3.2
New York	8	1,344	1,169	1,319	+15%	+ 2%	11.3	2.1
NORTH CAROLINA	8	916	970	995	– 6%	– 8%	21.4	2.1
NORTH DAKOTA	8	50	70	69	–29%	–28%	11.2	1.1
OHIO	8	1,033	1,049	1,012	– 2%	+ 2%	14.4	1.9
OKLAHOMA	8	413	418	380	– 1%	+ 9%	18.9	2.0
OREGON	8	401	427	384	– 6%	+ 4%	22.1	2.7
Pennsylvania	8	1,213	1,135	1,221	+ 7%	– 1%	15.2	2.1
RHODE ISLAND	8	70	91	64	–23%	+ 9%	10.6	1.7
SOUTH CAROLINA	8	650	675	698	– 4%	– 7%	28.5	2.7
SOUTH DAKOTA	8	100	103	84	– 3%	+19%	21.2	2.2
TENNESSEE	8	694	792	770	–12%	–10%	21.8	2.4
Texas	8	2,140	2,116	2,080	+ 1%	+ 3%	19.1	2.0
UTAH	8	192	213	186	– 8%	+26%	17.6	2.3
VERMONT	8	69	70	69	– 1%	0%	18.9	1.9
VIRGINIA	8	622	672	654	– 7%	– 5%	15.5	1.6
WASHINGTON	8	389	519	456	–25%	–15%	13.2	1.5
West Virginia	8	300	287	309	+ 5%	– 3%	23.7	3.0
WISCONSIN	8	514	536	520	– 4%	– 1%	16.0	1.8
WYOMING	8	53	102	81	–19%	– 2%	25.4	2.1
Puerto Rico#	8	314	386	389	–19%	–19%	17.1	
Virgin Islands#	7	6	11	10	–45%	–40%	18.5	
— CANADIAN PROVINCES —								
Alberta	8	289	291	335	– 1%	–14%	27.4	
British Columbia	7	295	307	279	– 3%	+ 2%	24.1	

*Less than 0.5%.
#Not included in the TOTAL U.S. death count or rates.

TRAFFIC SUMMARY

Month	Deaths 1989	Deaths 1988	Change
August	4,390	4,610	–5%
8 months	30,520	31,630	–4%
12 months Ending August, 1989	47,890	48,800	–2%

MOTOR-VEHICLE deaths in August totaled 4,390, a decrease of five per cent from the August 1988 total of 4,610.

Deaths for the first eight months of 1989 totaled 30,520, a decrease of four per cent from the 1988 eight-month total of 31,630.

Deaths for the 12-month period ending August totaled 47,890.

Disabling injuries for the first eight months of this year are estimated to be almost 1,100,000. These are injuries resulting in disability beyond the day of the accident, and do not include minor injuries which probably totaled as many more.

The cost of motor-vehicle accidents for the first eight months of this year is estimated at about $44 billion.

Based on preliminary vehicle mileage reports for this year, the estimated mileage death rate for the entire year is 2.4 (deaths per 100 million vehicle miles).

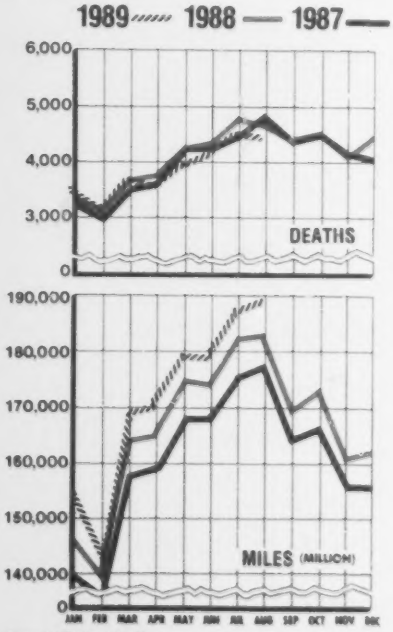
State Experience

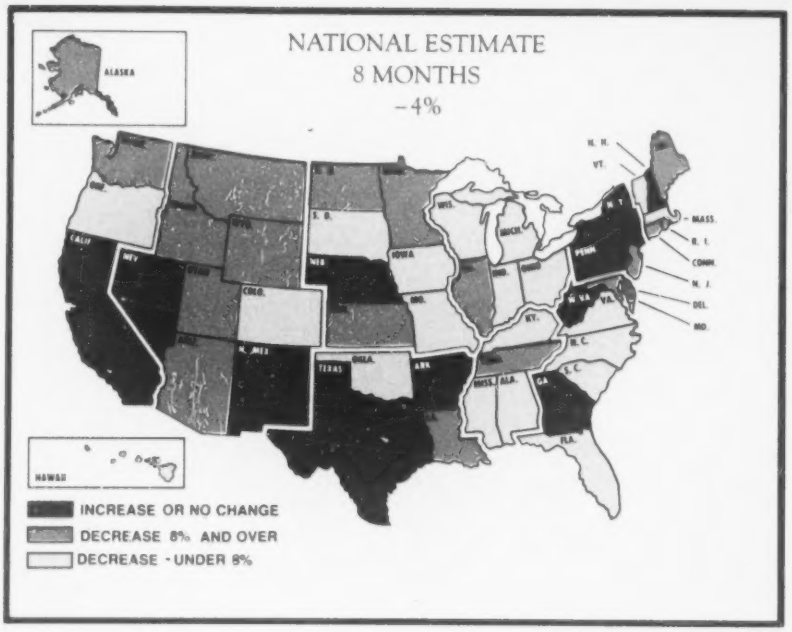
Among the 50 states reporting August experience, 31 states had fewer deaths than in the preceding August, and 19 states and the District of Columbia showed increases in deaths. For the first eight months, 39 states showed decreases in the number of deaths, while 11 states and the Dis-

trict of Columbia showed increases.

Delaware	−37%
North Dakota	−29%
Rhode Island	−25%
Washington	−23%
Wyoming	−19%
Connecticut	−17%
Kansas	−15%
New Jersey	−14%
Idaho	−12%
Tennessee	−12%
Alaska	−11%
Illinois	−11%
Montana	−11%
Arizona	−10%
Louisiana	−10%
Maine	−10%
Minnesota	−10%
Maryland	− 8%
Utah	− 8%
Hawaii	− 7%
Indiana	− 7%
Virginia	− 7%
North Carolina	− 6%
Oregon	− 6%
Colorado	− 5%
Iowa	− 5%
Massachusetts	− 5%
South Carolina	− 4%
Wisconsin	− 4%
South Dakota	− 3%
Kentucky	− 2%
Michigan	− 2%
Mississippi	− 2%
Missouri	− 2%
Ohio	− 2%
Alabama	− 1%
Oklahoma	− 1%
Vermont	− 1%
Florida	− *%

MONTHLY MOTOR-VEHICLE DEATHS AND TRAFFIC TRENDS





MOTOR-VEHICLE DEATHS AND CHANGES TOTAL U.S.

	Deaths				Percentage Changes				
					Corresponding Month			4 Months Moving Avg.+	
Month	1986	1987	1988	1989	1987-1989	1987-1988	1988-1989	1987-1988	1988-1989
January	3,274	3,230	3,310	3,450	+ 7%		+ 4%		+ 2%
February	2,814	3,000	3,130	3,150	+ 5%		+ 1%		+ 2%
March	3,559	3,520	3,610	3,640	+ 3%		+ 1%		+ 4%
April	3,607	3,580	3,720	3,500	− 2%		− 6%		− *%
May	4,331	4,270	4,220	3,870	− 9%		− 8%		− 4%
June	4,460	4,280	4,320	4,080	− 5%		− 6%		− 5%
July	4,704	4,470	4,710	4,440	− 1%		− 6%		− 6%
August	4,895	4,880	4,610	4,390	−10%		− 5%		− 6%
8 Months	31,644	31,230	31,630	30,520	− 2%		− 4%		
September	4,197	4,380	4,450			+ 2%		+ *%	
October	4,244	4,520	4,500			− *%		+ *%	
November	3,920	4,200	4,010			− 5%		− 2%	
December	3,860	4,070	4,410			+ 8%		+ 1%	
TOTAL	47,865	48,400	49,000	47,890[1]		+ 1%			

The 1986 figures are from the National Center for Health Statistics. The 1987, 1988, and 1989 figures are National Safety Council estimates.

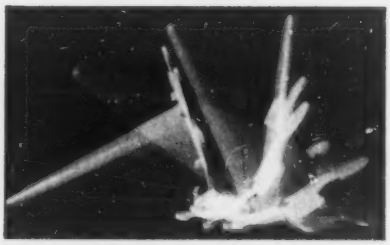
The 1989 national estimate is arrived at by assuming that the percentage change from 1988 to 1989 in the states reporting for both years reflects the 1988-1989 change in the entire country. First reports are preliminary, so revisions are made from time to time as later reports are received for the various months. Thus, figures above for 1989 may differ slightly from figures for the same months which will be published in future issues of TRAFFIC SAFETY.

+Four Months Moving Average is based on changes between the totals for four months instead of one month. For example, the August figure shows the change between the totals for May -August, 1988 and May - August, 1989, etc. Adding several months together tends to smooth out single month changes which may be affected by differences in the number of weekends in the month from one year to the next, random variations, etc.

[1]Deaths for the 12-month period ending August, 1989.

* Less than 0.5%.

Upsy-Daisy Traffic Cones



TRAFFIC CONES

Poly Enterprises introduces its "Daisy Cone." According to the manufacturer, these cones are 30 percent lighter than conventional expressway cones, making them easier to carry. However, says Poly Enterprises, they also will withstand higher wind gusts than heavier cones.

The company states that the Daisy Cone has a uniquely designed base that self-rights itself in the wind. Daisy Cones are made of 100-percent fluorescent vinyl and are available in 18-inch and 28-inch sizes. — **Poly Enterprises, Inc.**, 230 East Pomona Ave., Monrovia, CA 91016.

ASBESTOS-FREE BRAKES

A new four-page brochure is available from Nuturn that describes the company's asbestos-free/semi-metallic disc brake pads. The full-color brochure includes heat, fade resistance and recovery charts that confirm minor friction loss and rapid yet smooth recovery.

A wear-characteristics graph verifies minimal material loss per stop at operating temperatures under 550 F — the range covering the vast majority of normal driving. — **Nuturn Corporation, Automotive Products Division**, 1 Grizzly Lane, Smithville, TN 37166.

TRUCKING INFORMATION

This association announces publication of the new 1990 edition of *Trucksource*. This publication is a comprehensive information source for the trucking industry — containing more than 700 entries.

New subjects as well as expanded categories provide the resources necessary to meet the information needs of motor carriers and related industries. Informational sources listed range from books and periodicals to databases and directories.

Sources of information on legislative, regulatory and taxation issues are provided along with a special section, "Trucking and the Law," that details recent comments before federal agencies and ATA statements before Congress concerning current topics of interest to the trucking industry. — **American Trucking Associations**, 2200 Mill Road, Alexandria, VA 22314-4677.

LIGHT TRUCK TIRES

Two new bias-construction light truck tires have been introduced by Goodyear to accommodate the needs of nearly 30 percent of light trucks that do not use radials.

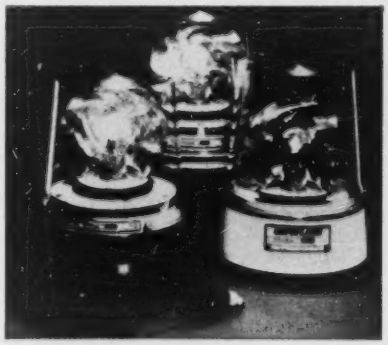
The Workhorse and the Workhorse M&S tires, initially offered in size 750-16, are the first in a complete line of bias-ply Workhorse tires that will be introduced in the near future. The Workhorse tire is designed to offer the driver of the older generation light truck a new highway rib design that channels away water for excellent wet highway traction.

The Workhorse M&S is made for drive axle use, where it gives dependable traction in mud or snow. — **Goodyear**, Akron, OH 44316-0001.

EMERGENCY BEACONS

Introduced are British-made vehicle beacons that use international standard "H1" series halogen lamps. "CRK" and "CRH" beacons from DG Controls incorporate rotating-mirror mechanisms that are virtually silent in operation.

Both models are molded in strong polycarbonate plastic in red, amber, green, blue and clear versions. The beacons can be permanently mounted on vehicles, and the company supplies fixing kits.



One of the CRK beacons has a magnetic base, the adhesion of which is supplemented by a suction pad. According to the manufacturer, this is useful for adapting a standard vehicle to emergency use. Another one incorporates a heater for use in low temperatures — for example, on a snow plow. — **DG Controls Ltd.**,

Belvedere Road, Burton-on-Trent, Staffordshire, DE13 OLA, England.

COMMERCIAL VEHICLE

A new vehicle has been engineered and designed by Enterprise Bus Corporation. It incorporates a massive full-view windshield that allows maximum unobstructed forward and peripheral vision for safety and comfort. The full-width front hood door swings up and away, allowing ease of access to maintenance items such as fluid bottles, oil check and battery.

The vehicle body and aluminum tube structure is designed to withstand the vigorous elements of the commercial market, says the manufacturer. Support systems and interior features are meticulously designed and manufactured to meet the exact requirements of the purchaser.

Chassis gross vehicle weight ratings start at 16,000 pounds and heavier, and both gasoline and diesel engines are available for many applications. — **Enterprise Bus Corporation**, Box 4404, Elkhart, IN 46514-0404.

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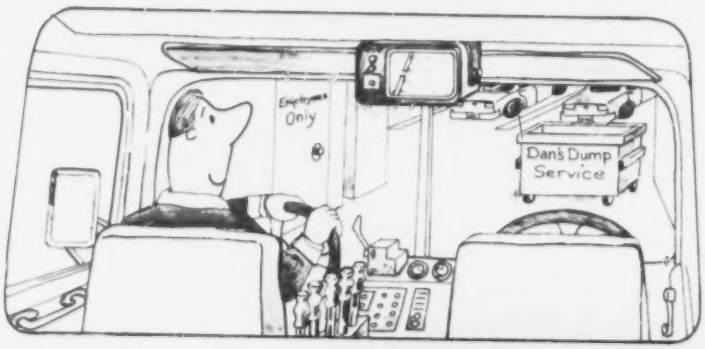

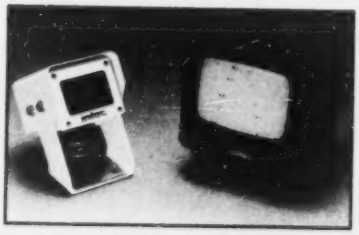

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TWO-WAY STREET

HELMETS: A SECOND OPINION

THIS SPACE is for dialogue with members of the professional traffic safety community, either through your letters or through excerpts from the kind of public comments experts might have put in letters to us if they had got around to it.

Address brief letters to Two-Way Street, TRAFFIC SAFETY Magazine, National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. Letters may be edited. Views expressed do not necessarily represent the opinion of the National Safety Council.

Which Myths Truer?

Peter Fassnacht ("Myth and the Motorcycle Helmet," Sept./Oct., 1989) perpetuates one set of myths to counter another set of myths. Just as mandatory helmet law initiatives have fostered a series of questionable arguments in opposition to helmet usage those same initiatives have distorted the value and impact of helmet usage.

The 20-year campaign to mandate helmet usage for motorcyclists has resulted in a gross exaggeration of the importance of helmet usage as a primary safety strategy. There should be little surprise that exaggerations would also crop up on the opposite side of this debate.

If demographics and exposure (a common denominator such as miles traveled) were factored into the analyses of helmet-law impact, the overall effect would probably be classified as tertiary.

James J. Baxter
President
Citizens for Rational
Traffic Laws, Inc.
Dane, Wis.

Drivers Could Be Worse

The amazing fact involving automobile accidents is **not** the number that do occur but the fact that there are not more of them and they are not as serious as they could be. The number of drivers in America has increased to over 160 million. We are now traveling over two trillion miles per year. The mere exposure represented by such numbers would lead a person to believe that the numbers of accidents must be out of control. In reality we are killing fewer people and have a lower death rate (2.4 per 100 million miles) than at any time in recent history. No other country can match our safety record. All the more amazing when we realize we continue to increase our road travel by four percent per year.

Dr. Howard Matthias
Former director
Highway Traffic Safety Center
St. Cloud, Minn.
(Writing in the *Journal of Traffic Safety Education*)

Bring Back Siestas

Your article, "Snoozing Almost Worse Than Boozing" (May/June, 1989), made a timely point. The new research coming out shows that it's more natural than was previously realized for people to need a nap in late afternoon.

This has important implications for traffic safety. Here's what some of the experts have been reporting recently.

Roger Broughton, professor of neurology, University of Ottawa: "There's a well-documented drop in people's performance at work in midafternoon, along with a simultaneous increase in accidents resulting from sleepiness."

Peretz Lavie, sleep researcher, Technion Israel Institution of Technology, Haifa: "Alertness peaks in the morning and early evening. Volunteers who have trouble trying to sleep at those times readily fall sleep in midafternoon as well as at bedtime."

William Dement, director, Sleep Disorders Clinic and Research Center, Stanford University: "It seems nature definitely intended that adults should nap in the middle of the day."

David Dinges, sleep researcher, University of Pennsylvania: "After napping, people not only feel better, but do significantly better on tests of mental performance."

Cultures built around the siesta obviously were onto something. But, as developing countries industrialize, their governments consciously try to stamp out the custom.

It's probably too late to bring back the siesta, but some provision ought to be made to encourage people who operate dangerous machinery — especially buses, trucks and cars — to stop and take a nap when they feel drowsy.

Unfortunately, as things are now, a drowsy driver in most places would have a hard time finding somewhere to pull over safely. You'd be risking being rear-ended or sideswiped by another drowsy driver. At minimum, you'd be inviting the attentions of the police.

Michael Eldritch
New York City

HAZARDOUS MATERIALS TRANSPORTATION TRAINING FOR YOUR EMPLOYEES MAKES GOOD BUSINESS SENSE—AND IT'S THE LAW!

Transporting hazardous materials/dangerous goods is regulated in detail by the United States and foreign governments. In this country the Department of Transportation (DOT) administers the rules and guidelines set forth in Title 49, Code of Federal Regulations. The international transportation of dangerous goods (hazardous materials) by air is governed by the rules set forth by the International Civil Aviation Organization (ICAO) Technical Instructions. In both cases, these regulations *require* that all persons handling, documenting or transporting materials designated as hazardous or dangerous must receive *INITIAL* and *RECURRENT ANNUAL* training.

The National Safety Council's Hazardous Materials Transportation Seminar will help you comply with these Federal regulations.

WHO SHOULD ATTEND?

If you are a shipper:
Each and every employee who is involved in the shipping process of your company. This includes employees responsible for identifying, documenting, handling, packaging, marking, labeling, receiving, shipping and transporting hazardous materials/dangerous goods plus those responsible for managing and supervising these operations.

If you are a transporter:
All employees involved in the transportation process including package and cargo handlers, drivers, pilots, customer service personnel, and of course, those responsible for managing and supervising these functions.

PROGRAM COVERS

Day 1

Title 49, Code of Federal Regulations

- Regulatory Agency Review
- Purpose and Use of Hazardous Materials Tables
- Identifying and Classifying Hazardous Materials
- Packaging Requirements
- Marking and Labeling
- Shippers Certification and Other Documentation
- Vehicle and Container Placarding
- Enforcement Procedures and Penalties

Day 2

International Air Transport Association (IATA)/ International Civil Air Organization (ICAO)

- Review of Day One
- Introduction to IATA and ICAO Regulations with comparative analysis of Title 49, CFR
- The Dangerous Goods List and Its Use
- Packaging Requirements: UN/ICAO, DOT, IATA
- Marking and Labeling
- The Dangerous Goods Declaration Form and Bill
- The U.S. Government (USG) Variations and Their Impact

TUITION

Member: **$295** Nonmember: **$355**

DATES AND LOCATIONS

Cleveland, OH	Janury 9-10
Casper, WY	January 23-24
St. Paul, MN	February 7-8
Tampa, FL	March 6-7
San Francisco, CA	March 21-22
Baltimore, MD	April 10-11
West Springfield, MA	April 24-25
Kansas City, MO	May 8-9
Memphis, TN	May 15-16

THE INSTRUCTOR

Darlene W. Hunt is a nationally recognized expert in the domestic and international transportation of hazardous materials and dangerous goods. With over ten years experience in the hazardous materials transportation field and additional resources of more than twenty years experience, Ms. Hunt and her asssociates are able to provide an effective and insightful program. Her delivery is known for turning a subject matter often viewed as tedious and complex into an exciting and meaningful learning experience.

TO REGISTER

REFERENCE NUMBER
0681

Complete the form below for each person attending and mail to:

Traffic Safety Department, National Safety Council, 444 North Michigan Avenue, Chicago, Illinois 60611

Please include check or money order payable to: National Safety Council. For further information, contact Tim Kennedy (312) 527-4800 x8407, 8:30 a.m.-4:45 p.m. Central Standard Time.

☐ YES, PLEASE REGISTER THE FOLLOWING EMPLOYEE(s) IN THE TRANSPORTATION OF HAZARDOUS MATERIALS WORKSHOP INDICATED

Product No. 87058-0000 Tuition: Member: $295, Nonmember: $355

Membership I.D. No. ☐☐☐☐☐☐☐☐☐ Tuition enclosed $_____

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Workshop Location – Dates

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